STIC Search Report

Biotech-Chem Library

STIC Database Tracking Number: 202493

TO: Callie Shosho
Location: Remsen 10d15
Tuesday, September 26, 2006
Art Unit: 1714
Phone: 571-272-1123
Serial Number: 10 / 682561

From: Jan Delaval
Location: EIC 1700
Remsen 4a30
Phone: 571-272-2504

jan.delaval@uspto.gov

Search Notes

SCIENTIFIC REFERENCE BR
Sci & Tech Inf. Cntr
SEP 2 REC
Pat. & T.M Office

Access DB# 202493

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Callie Shosho Examiner # : 75636 Date: 9/21/06
Art Unit: 1714 Phone Number ~~30~~ 272-1123 Serial Number: 10/682,561
Mail Box and Bldg/Room Location: Rem 10D15 Results Format Preferred (circle): [✓ PAPER] DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Aqueous Inks Containing Colored Polymers
Inventors (please provide full names): Jeffrey H. Banning, Donald R. Titterington, Wolfgang G. Wedler, Clifford R. King
Earliest Priority Filing Date: 10/9/03

***For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.**

Please find the colorant of claim 1 which is anhydride copolymer having at least one chromogen and at least one ester, amide, imide or thioester ~~attached~~ covalently bonded thereto and of Claim 26 which additionally has antioxidant or UV stabilizer ~~added~~ covalently bonded thereto.

Specific chromogen - claims 8, 10, 11
Specific antioxidant/UV stablizer - claim

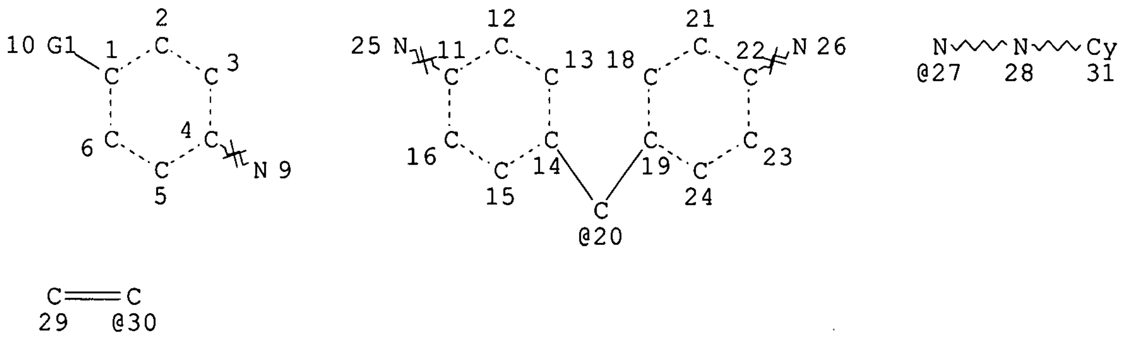
Thank You

****

STAFF USE ONLY	**Type of Search**	**Vendors and cost where applicable**
Searcher:	NA Sequence (#)	STN ✓
Searcher Phone #: 22504	AA Sequence (#)	Dialog
Searcher Location:	Structure (#) ✓	Questel/Orbit
Date Searcher Picked Up: 9/26/06	Bibliographic	Dr.Link
Date Completed: 9/26/06	Litigation	Lexis/Nexis
Searcher Prep & Review Time:	Fulltext	Sequence Systems
Clerical Prep Time: 30	Patent Family	WWW/Internet
Online Time: 170	Other	Other (specify)

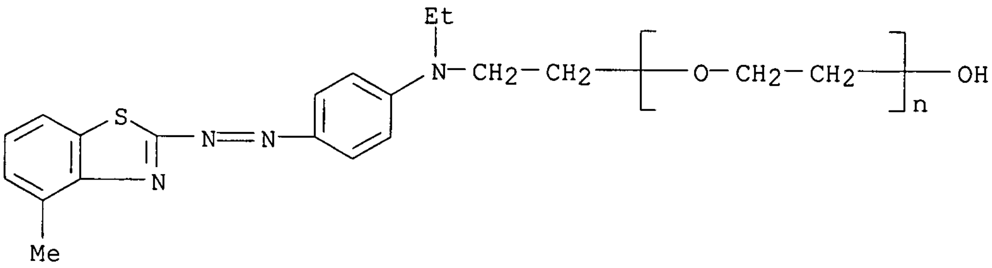
PTO-1590 (8-01)

```
=> fil reg
FILE 'REGISTRY' ENTERED AT 14:00:06 ON 26 SEP 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2006 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:    25 SEP 2006  HIGHEST RN 908487-18-3
DICTIONARY FILE UPDATES:   25 SEP 2006  HIGHEST RN 908487-18-3

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH June 30, 2006

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document.  For information
on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

=> d sta que l12
L9          25351 SEA FILE=REGISTRY ABB=ON  PLU=ON  (108-31-6/CRN OR 1122-12-9/CR
                  N OR 1122-17-4/CRN OR 15111-21-4/CRN OR 2170-03-8/CRN OR
                  5926-51-2/CRN OR 766-39-2/CRN OR 96-02-6/CRN)
L10               STR
```



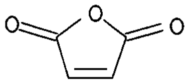
```
VAR G1=27/20/30
NODE ATTRIBUTES:
NSPEC   IS RC     AT   9
NSPEC   IS RC     AT  25
NSPEC   IS RC     AT  26
NSPEC   IS RC     AT  29
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  28

STEREO ATTRIBUTES: NONE
L12            67 SEA FILE=REGISTRY SUB=L9 SSS FUL L10
```

```
100.0% PROCESSED    1675 ITERATIONS                          67 ANSWERS
SEARCH TIME: 00.00.01



=> d ide can tot l13

L13  ANSWER 1 OF 18  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   882031-65-4  REGISTRY
ED   Entered STN:  27 Apr 2006
CN   2,5-Furandione, polymer with ethenylbenzene, 2-[2-(2-
     methoxymethylethoxy)methylethoxy]methylethyl ester, ester with
     α-[2-[ethyl[4-[(4-methyl-2-benzothiazolyl)azo]phenyl]amino]ethyl]-
     ω-hydroxypoly(oxy-1,2-ethanediyl) (9CI)  (CA INDEX NAME)
MF   C10 H22 O4 . x (C8 H8 . C4 H2 O3)x . x (C2 H4 O)n C18 H20 N4 O S
PCT  Polyether, Polystyrene, Polyvinyl
SR   CA
LC   STN Files:   CA, CAPLUS, USPATFULL

     CM   1

     CRN  722444-56-6
     CMF  (C2 H4 O)n C18 H20 N4 O S
     CCI  PMS
```



```
     CM   2

     CRN  25498-49-1
     CMF  C10 H22 O4
     CCI  IDS


HO—CH2—CH2—O—CH2—CH2—O—CH2—CH2—OMe



             3 ( D1—Me )


     CM   3

     CRN  9011-13-6
     CMF  (C8 H8 . C4 H2 O3)x
     CCI  PMS
```

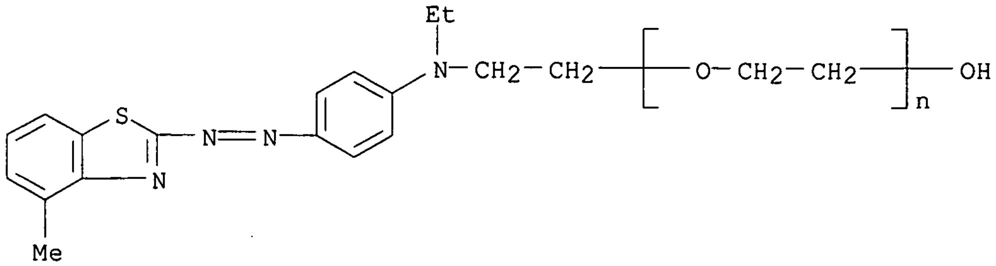
```
          CM    4

          CRN   108-31-6
          CMF   C4 H2 O3
```



```
          CM    5

          CRN   100-42-5
          CMF   C8 H8
```

$H_2C{=}CH-Ph$

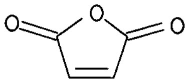
```
                1 REFERENCES IN FILE CA (1907 TO DATE)
                1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE   1:  144:371736

L13  ANSWER 2 OF 18  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   882031-64-3  REGISTRY
ED   Entered STN:  27 Apr 2006
CN   2,5-Furandione, polymer with ethenylbenzene, ester with
     α-[2-[ethyl[4-[(4-methyl-2-benzothiazolyl)azo]phenyl]amino]ethyl]-
     ω-hydroxypoly(oxy-1,2-ethanediyl) and α-undecyl-ω-
     hydroxypoly(oxy-1,2-ethanediyl) (9CI)  (CA INDEX NAME)
MF   (C8 H8 . C4 H2 O3)x . x (C2 H4 O)n C18 H20 N4 O S . x (C2 H4 O)n C11 H24 O
PCT  Polyether, Polystyrene, Polyvinyl
SR   CA
LC   STN Files:   CA, CAPLUS, USPATFULL

     CM    1

     CRN   722444-56-6
     CMF   (C2 H4 O)n C18 H20 N4 O S
     CCI   PMS
```



```
     CM    2
     CRN  34398-01-1
     CMF  (C2 H4 O)n C11 H24 O
     CCI  PMS
```

$HO-[CH_2-CH_2-O]_n-(CH_2)_{10}-Me$

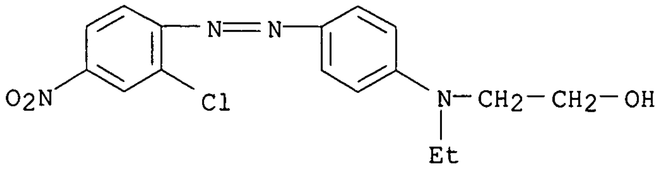
```
     CM   3

     CRN  9011-13-6
     CMF  (C8 H8 . C4 H2 O3)x
     CCI  PMS

          CM   4

          CRN  108-31-6
          CMF  C4 H2 O3
```



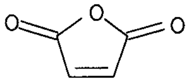
```
          CM   5

          CRN  100-42-5
          CMF  C8 H8
```

$H_2C=CH-Ph$

```
               1 REFERENCES IN FILE CA (1907 TO DATE)
               1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE   1:  144:371736

L13  ANSWER 3 OF 18  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   811438-35-4  REGISTRY
ED   Entered STN:  11 Jan 2005
CN   2,5-Furandione, polymer with ethenylbenzene, 2-[[4-[(2-chloro-4-
     nitrophenyl)azo]phenyl]ethylamino]ethyl ester (9CI)  (CA INDEX NAME)
MF   C16 H17 Cl N4 O3 . x (C8 H8 . C4 H2 O3)x
PCT  Polystyrene, Polyvinyl
SR   CA
LC   STN Files:   CA, CAPLUS

     CM   1

     CRN  3180-81-2
     CMF  C16 H17 Cl N4 O3
```



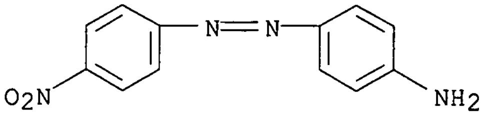
```
     CM   2

     CRN  9011-13-6
     CMF  (C8 H8 . C4 H2 O3)x
     CCI  PMS

          CM   3

          CRN  108-31-6
          CMF  C4 H2 O3
```



```
          CM   4

          CRN  100-42-5
          CMF  C8 H8
```

$H_2C{=}CH{-}Ph$

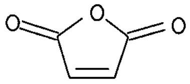
```
               1 REFERENCES IN FILE CA (1907 TO DATE)
               1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE   1:  142:58221

L13  ANSWER 4 OF 18  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   220114-25-0  REGISTRY
ED   Entered STN:  02 Mar 1999
CN   2,5-Furandione, polymer with 4-[(4-nitrophenyl)azo]benzenamine and
     1-octadecene (9CI)  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   1-Octadecene, polymer with 2,5-furandione and 4-[(4-
     nitrophenyl)azo]benzenamine (9CI)
CN   Benzenamine, 4-[(4-nitrophenyl)azo]-, polymer with 2,5-furandione and
     1-octadecene (9CI)
MF   (C18 H36 . C12 H10 N4 O2 . C4 H2 O3)x
CI   PMS
PCT  Polyolefin, Polyother, Polyvinyl
SR   CA
LC   STN Files:   CA, CAPLUS

     CM   1

     CRN  730-40-5
     CMF  C12 H10 N4 O2
```



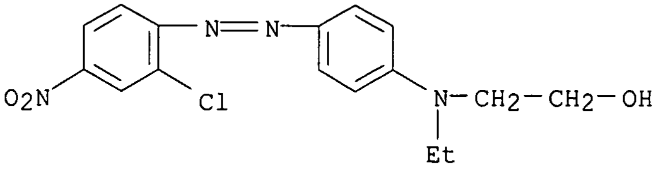
```
     CM   2

     CRN  112-88-9
     CMF  C18 H36
```

$H_2C{=}CH-(CH_2)_{15}-Me$

```
     CM   3

     CRN  108-31-6
     CMF  C4 H2 O3
```



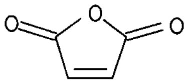
```
               1 REFERENCES IN FILE CA (1907 TO DATE)
               1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE   1:  130:145740

L13  ANSWER 5 OF 18  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   197663-78-8  REGISTRY
ED   Entered STN:  21 Nov 1997
CN   2,5-Furandione, polymer with 1-octadecene, 2-[[4-[(2-chloro-4-
     nitrophenyl)azo]phenyl]ethylamino]ethyl ester (9CI)  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   1-Octadecene, polymer with 2,5-furandione, 2-[[4-[(2-chloro-4-
     nitrophenyl)azo]phenyl]ethylamino]ethyl ester (9CI)
MF   (C18 H36 . C4 H2 O3)x . x C16 H17 Cl N4 O3
PCT  Polyolefin, Polyvinyl
SR   CA
LC   STN Files:   CA, CAPLUS

     CM   1

     CRN  3180-81-2
     CMF  C16 H17 Cl N4 O3
```



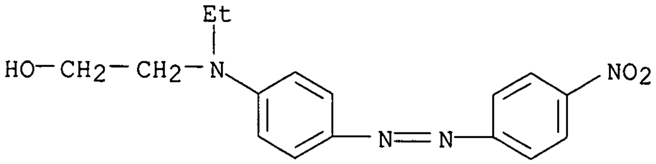
```
     CM   2

     CRN  25266-02-8
     CMF  (C18 H36 . C4 H2 O3)x
     CCI  PMS

          CM   3

          CRN  112-88-9
          CMF  C18 H36
```

$H_2C=CH-(CH_2)_{15}-Me$

```
          CM   4

          CRN  108-31-6
          CMF  C4 H2 O3
```



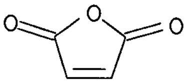
```
               1 REFERENCES IN FILE CA (1907 TO DATE)
               1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE   1:  127:332148

L13  ANSWER 6 OF 18  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   197663-77-7  REGISTRY
ED   Entered STN:  21 Nov 1997
CN   2,5-Furandione, polymer with 1-octadecene, 2-[ethyl[4-[(4-
     nitrophenyl)azo]phenyl]amino]ethyl ester (9CI)  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   1-Octadecene, polymer with 2,5-furandione, 2-[ethyl[4-[(4-
     nitrophenyl)azo]phenyl]amino]ethyl ester (9CI)
MF   (C18 H36 . C4 H2 O3)x . x C16 H18 N4 O3
PCT  Polyolefin, Polyvinyl
SR   CA
LC   STN Files:   CA, CAPLUS

     CM   1

     CRN  2872-52-8
     CMF  C16 H18 N4 O3
```



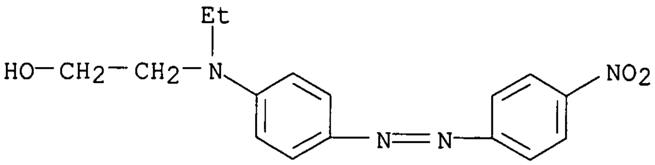
```
     CM   2

     CRN  25266-02-8
     CMF  (C18 H36 . C4 H2 O3)x
     CCI  PMS

          CM   3

          CRN  112-88-9
          CMF  C18 H36
```

$H_2C{=}CH{-}(CH_2)_{15}{-}Me$

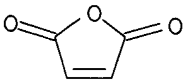
```
          CM   4

          CRN  108-31-6
          CMF  C4 H2 O3
```



```
                1 REFERENCES IN FILE CA (1907 TO DATE)
                1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE   1:  127:332148

L13  ANSWER 7 OF 18  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   195440-51-8  REGISTRY
ED   Entered STN:  16 Oct 1997
CN   2,5-Furandione, polymer with ethenylbenzene and 2-[ethyl[4-[(4-
     nitrophenyl)azo]phenyl]amino]ethanol (9CI)  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   Benzene, ethenyl-, polymer with 2-[ethyl[4-[(4-
     nitrophenyl)azo]phenyl]amino]ethanol and 2,5-furandione (9CI)
CN   Ethanol, 2-[ethyl[4-[(4-nitrophenyl)azo]phenyl]amino]-, polymer with
     ethenylbenzene and 2,5-furandione (9CI)
MF   (C16 H18 N4 O3 . C8 H8 . C4 H2 O3)x
CI   PMS
PCT  Polyother, Polystyrene, Polyvinyl
SR   CA
LC   STN Files:   CA, CAPLUS

     CM   1
     CRN  2872-52-8
     CMF  C16 H18 N4 O3
```



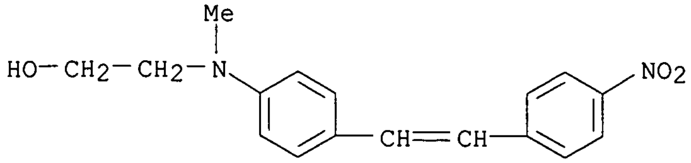
```
     CM   2

     CRN  108-31-6
     CMF  C4 H2 O3
```



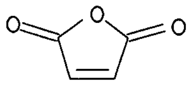
```
     CM   3

     CRN  100-42-5
     CMF  C8 H8
```

$H_2C{=}CH{-}Ph$

```
                1 REFERENCES IN FILE CA (1907 TO DATE)
                1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE   1:  127:240576

L13  ANSWER 8 OF 18  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   153422-13-0  REGISTRY
ED   Entered STN:  04 Mar 1994
CN   2,5-Furandione, polymer with ethenylbenzene, 2-[methyl[4-[2-(4-
     nitrophenyl)ethenyl]phenyl]amino]ethyl ester (9CI)  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   Benzene, ethenyl-, polymer with 2,5-furandione, 2-[methyl[4-[2-(4-
     nitrophenyl)ethenyl]phenyl]amino]ethyl ester (9CI)
MF   C17 H18 N2 O3 . x (C8 H8 . C4 H2 O3)x
PCT  Polystyrene, Polyvinyl
SR   CA
LC   STN Files:   CA, CAPLUS, USPATFULL

     CM   1

     CRN  122008-76-8
     CMF  C17 H18 N2 O3
```



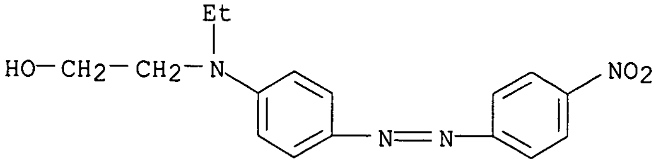
```
     CM   2

     CRN  9011-13-6
     CMF  (C8 H8 . C4 H2 O3)x
     CCI  PMS

          CM   3

          CRN  108-31-6
          CMF  C4 H2 O3
```



```
          CM   4

          CRN  100-42-5
          CMF  C8 H8
```

$H_2C{=}CH-Ph$

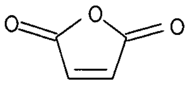
```
                 1 REFERENCES IN FILE CA (1907 TO DATE)
                 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE   1:  120:231409

L13  ANSWER 9 OF 18  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   153422-11-8  REGISTRY
ED   Entered STN:  04 Mar 1994
CN   2,5-Furandione, polymer with 1-(ethenyloxy)butane, 2-[ethyl[4-[(4-
     nitrophenyl)azo]phenyl]amino]ethyl ester (9CI)  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   Butane, 1-(ethenyloxy)-, polymer with 2,5-furandione, 2-[ethyl[4-[(4-
     nitrophenyl)azo]phenyl]amino]ethyl ester (9CI)
MF   C16 H18 N4 O3 . x (C6 H12 O . C4 H2 O3)x
PCT  Polyvinyl
SR   CA
LC   STN Files:   CA, CAPLUS, USPATFULL

     CM   1

     CRN  2872-52-8
     CMF  C16 H18 N4 O3
```



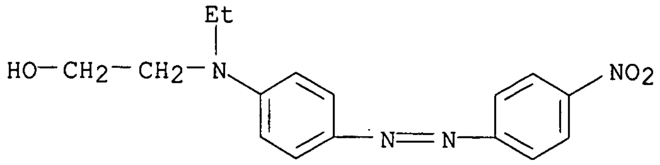
```
     CM   2

     CRN  26298-63-5
     CMF  (C6 H12 O . C4 H2 O3)x
     CCI  PMS

          CM   3

          CRN  111-34-2
          CMF  C6 H12 O
```

$n\text{-BuO}-CH=CH_2$

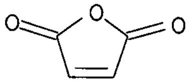
```
          CM   4

          CRN  108-31-6
          CMF  C4 H2 O3
```



```
               1 REFERENCES IN FILE CA (1907 TO DATE)
               1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE   1:  120:231409

L13  ANSWER 10 OF 18  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   153422-10-7  REGISTRY
ED   Entered STN:  04 Mar 1994
CN   2,5-Furandione, polymer with ethenylbenzene, 2-[ethyl[4-[(4-
     nitrophenyl)azo]phenyl]amino]ethyl ester (9CI)  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   Benzene, ethenyl-, polymer with 2,5-furandione, 2-[ethyl[4-[(4-
     nitrophenyl)azo]phenyl]amino]ethyl ester (9CI)
MF   C16 H18 N4 O3 . x (C8 H8 . C4 H2 O3)x
PCT  Polystyrene, Polyvinyl
SR   CA
LC   STN Files:   CA, CAPLUS, USPATFULL

     CM   1

     CRN  2872-52-8
     CMF  C16 H18 N4 O3
```



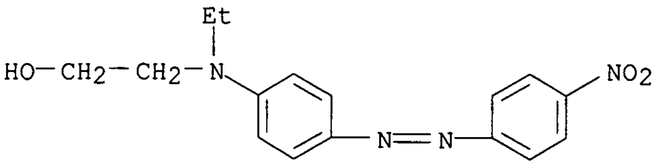
```
     CM   2

     CRN  9011-13-6
     CMF  (C8 H8 . C4 H2 O3)x
     CCI  PMS

          CM   3

          CRN  108-31-6
          CMF  C4 H2 O3
```



```
          CM   4

          CRN  100-42-5
          CMF  C8 H8
```

$H_2C{=}CH-Ph$

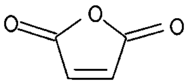
```
                2 REFERENCES IN FILE CA (1907 TO DATE)
                2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE   1:  136:332694

REFERENCE   2:  120:231409

L13  ANSWER 11 OF 18  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   152286-81-2  REGISTRY
ED   Entered STN:  14 Jan 1994
CN   2,5-Furandione, polymer with 1-propene, 2-[ethyl[4-[(4-
     nitrophenyl)azo]phenyl]amino]ethyl ester (9CI)  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   1-Propene, polymer with 2,5-furandione, 2-[ethyl[4-[(4-
     nitrophenyl)azo]phenyl]amino]ethyl ester (9CI)
MF   C16 H18 N4 O3 . x (C4 H2 O3 . C3 H6)x
PCT  Polyolefin, Polyvinyl
SR   CA
LC   STN Files:   CA, CAPLUS

     CM   1

     CRN  2872-52-8
     CMF  C16 H18 N4 O3
```



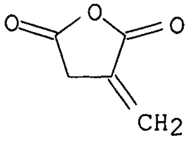
```
     CM   2

     CRN  25722-45-6
     CMF  (C4 H2 O3 . C3 H6)x
     CCI  PMS

          CM   3

          CRN  115-07-1
          CMF  C3 H6
```

$H_3C-CH=CH_2$

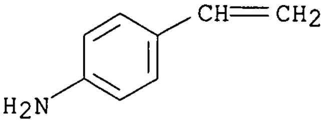
```
          CM   4

          CRN  108-31-6
          CMF  C4 H2 O3
```



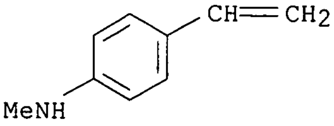
```
               1 REFERENCES IN FILE CA (1907 TO DATE)
               1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE   1:  120:55230

L13  ANSWER 12 OF 18  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   132357-14-3  REGISTRY
ED   Entered STN:  01 Mar 1991
CN   2,5-Furandione, dihydro-3-methylene-, polymer with 4-ethenylbenzenamine
     (9CI)  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   Benzenamine, 4-ethenyl-, polymer with dihydro-3-methylene-2,5-furandione
     (9CI)
MF   (C8 H9 N . C5 H4 O3)x
CI   PMS
PCT  Polyother, Polystyrene
SR   CA
LC   STN Files:   CA, CAPLUS

     CM   1
     CRN  2170-03-8
     CMF  C5 H4 O3
```



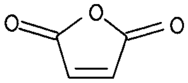
```
     CM   2

     CRN  1520-21-4
     CMF  C8 H9 N
```



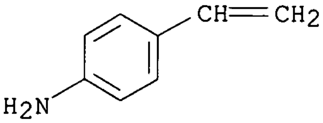
```
                1 REFERENCES IN FILE CA (1907 TO DATE)
                1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE   1:  114:104495

L13  ANSWER 13 OF 18  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   132357-13-2  REGISTRY
ED   Entered STN:  01 Mar 1991
CN   2,5-Furandione, polymer with 4-ethenyl-N-methylbenzenamine (9CI)  (CA
     INDEX NAME)
OTHER CA INDEX NAMES:
CN   Benzenamine, 4-ethenyl-N-methyl-, polymer with 2,5-furandione (9CI)
MF   (C9 H11 N . C4 H2 O3)x
CI   PMS
PCT  Polystyrene, Polyvinyl
SR   CA
LC   STN Files:   CA, CAPLUS

     CM   1

     CRN  102877-42-9
     CMF  C9 H11 N
```



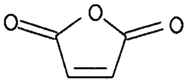
```
     CM   2

     CRN  108-31-6
     CMF  C4 H2 O3
```



```
               1 REFERENCES IN FILE CA (1907 TO DATE)
               1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE   1:  114:104495

L13  ANSWER 14 OF 18  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   132357-12-1  REGISTRY
ED   Entered STN:  01 Mar 1991
CN   2,5-Furandione, polymer with 4-ethenylbenzenamine (9CI)  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   Benzenamine, 4-ethenyl-, polymer with 2,5-furandione (9CI)
MF   (C8 H9 N . C4 H2 O3)x
CI   PMS
PCT  Polystyrene, Polyvinyl
SR   CA
LC   STN Files:   CA, CAPLUS, USPATFULL

     CM   1

     CRN  1520-21-4
     CMF  C8 H9 N
```

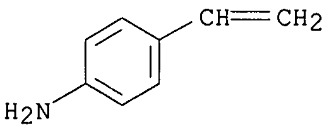


```
     CM   2

     CRN  108-31-6
     CMF  C4 H2 O3
```



```
               2 REFERENCES IN FILE CA (1907 TO DATE)
               1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
               2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE   1:  125:103902

REFERENCE   2:  114:104495

L13  ANSWER 15 OF 18  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   119896-86-5  REGISTRY
```

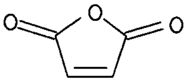
```
ED   Entered STN:  31 Mar 1989
CN   2,5-Furandione, polymer with ethene, 4-ethenylbenzenamine, ethenylbenzene
     and 1-propene, graft (9CI)  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   1-Propene, polymer with ethene, 4-ethenylbenzenamine, ethenylbenzene and
     2,5-furandione, graft (9CI)
CN   Benzenamine, 4-ethenyl-, polymer with ethene, ethenylbenzene,
     2,5-furandione and 1-propene, graft (9CI)
CN   Benzene, ethenyl-, polymer with ethene, 4-ethenylbenzenamine,
     2,5-furandione and 1-propene, graft (9CI)
CN   Ethene, polymer with 4-ethenylbenzenamine, ethenylbenzene, 2,5-furandione
     and 1-propene, graft (9CI)
MF   (C8 H9 N . C8 H8 . C4 H2 O3 . C3 H6 . C2 H4)x
CI   PMS
PCT  Polyolefin, Polystyrene, Polyvinyl
SR   CA
LC   STN Files:   CA, CAPLUS

     CM   1

     CRN  1520-21-4
     CMF  C8 H9 N
```



```
     CM   2

     CRN  115-07-1
     CMF  C3 H6
```

$H_3C-CH=CH_2$

```
     CM   3

     CRN  108-31-6
     CMF  C4 H2 O3
```



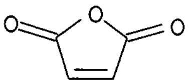
```
     CM   4

     CRN  100-42-5
     CMF  C8 H8
```

$H_2C{=}CH-Ph$

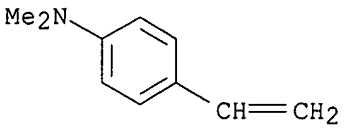
```
     CM   5

     CRN  74-85-1
     CMF  C2 H4
```

$H_2C{=}CH_2$

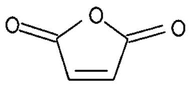
```
               1 REFERENCES IN FILE CA (1907 TO DATE)
               1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE   1:  110:155456

L13  ANSWER 16 OF 18  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   40907-06-0  REGISTRY
ED   Entered STN:  16 Nov 1984
CN   2,5-Furandione, compd. with 4-ethenyl-N,N-dimethylbenzenamine homopolymer
     (9CI)  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   Benzenamine, 4-ethenyl-N,N-dimethyl-, homopolymer, compd. with
     2,5-furandione (9CI)
OTHER NAMES:
CN   p-(Dimethylamino)styrene polymer-maleic anhydride complex
MF   (C10 H13 N)x . x C4 H2 O3
PCT  Polystyrene
LC   STN Files:   CA, CAPLUS

     CM   1

     CRN  108-31-6
     CMF  C4 H2 O3
```



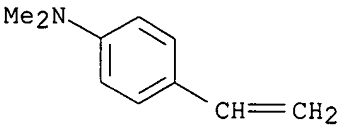
```
     CM   2

     CRN  24936-45-6
     CMF  (C10 H13 N)x
     CCI  PMS

          CM   3

          CRN  2039-80-7
          CMF  C10 H13 N
```



```
                 1 REFERENCES IN FILE CA (1907 TO DATE)
                 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE   1:  78:58965

L13  ANSWER 17 OF 18  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   40840-94-6  REGISTRY
ED   Entered STN:  16 Nov 1984
CN   2,5-Furandione, compd. with ethenylbenzene polymer with
     4-ethenyl-N,N-dimethylbenzenamine (9CI)  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   Benzenamine, 4-ethenyl-N,N-dimethyl-, polymer with ethenylbenzene, compd.
     with 2,5-furandione (9CI)
CN   Benzene, ethenyl-, polymer with 4-ethenyl-N,N-dimethylbenzenamine, compd.
     with 2,5-furandione (9CI)
OTHER NAMES:
CN   p-(Dimethylamino)styrene-styrene polymer-maleic anhydride complex
MF   (C10 H13 N . C8 H8)x . x C4 H2 O3
PCT  Polystyrene
LC   STN Files:   CA, CAPLUS

     CM   1

     CRN  108-31-6
     CMF  C4 H2 O3
```



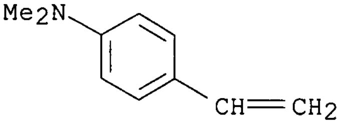
```
     CM   2

     CRN  24936-46-7
     CMF  (C10 H13 N . C8 H8)x
     CCI  PMS

          CM   3

          CRN  2039-80-7
          CMF  C10 H13 N
```



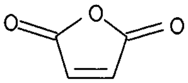
```
          CM   4

          CRN  100-42-5
          CMF  C8 H8
```

$H_2C{=}CH-Ph$

```
                    1 REFERENCES IN FILE CA (1907 TO DATE)
                    1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE   1:  78:58965

L13  ANSWER 18 OF 18  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   30374-78-8  REGISTRY
ED   Entered STN:  16 Nov 1984
CN   Maleic anhydride, polymer with N,N-dimethyl-p-vinylaniline (8CI)  (CA
     INDEX NAME)
MF   (C10 H13 N . C4 H2 O3)x
CI   PMS
PCT  Polystyrene, Polyvinyl
LC   STN Files:   CA, CAPLUS

     CM   1

     CRN  2039-80-7
     CMF  C10 H13 N
```



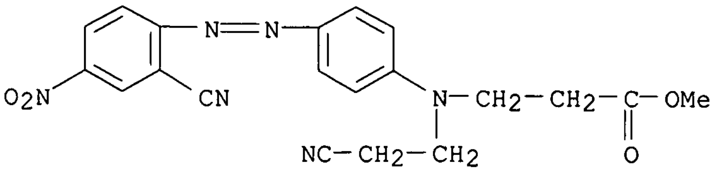
```
     CM   2

     CRN  108-31-6
     CMF  C4 H2 O3
```



```
                    1 REFERENCES IN FILE CA (1907 TO DATE)
                    1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE   1:  68:78879


=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 14:00:30 ON 26 SEP 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
```

```
COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)


Copyright of the articles to which records in this database refer is
held by the publishers listed in the PUBLISHER (PB) field (available
for records published or updated in Chemical Abstracts after December
26, 1996), unless otherwise indicated in the original publications.
The CA Lexicon is the copyrighted intellectual property of the
the American Chemical Society and is provided to assist you in searching
databases on STN.  Any dissemination, distribution, copying, or storing
of this information, without the prior written consent of CAS, is
strictly prohibited.

FILE COVERS 1907 - 26 Sep 2006  VOL 145 ISS 14
FILE LAST UPDATED: 25 Sep 2006  (20060925/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> d l47 bib abs hitind hitstr retable tot

L47  ANSWER 1 OF 8  HCAPLUS  COPYRIGHT 2006 ACS on STN
AN   2006:322506  HCAPLUS
DN   144:371736
TI   Aqueous inks containing colored anhydride polymers
IN   Banning, Jeffery H.; Titterington, Donald R.;
     Wedler, Wolfgang G.; King, Clifford R.
PA   Xerox Corporation, USA
SO   U.S. Pat. Appl. Publ., 48 pp.
     CODEN: USXXCO
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.          KIND   DATE       APPLICATION NO.       DATE
     ---------------     ----   --------   --------------------  --------
PI   US 2006074142        A1    20060406   US 2003-682561        20031009
PRAI US 2003-682561             20031009
AB   Disclosed is an ink composition comprising (a) an aqueous liquid vehicle, and (b)
a
     colorant which comprises an anhydride copolymer having at least one
     chromogen covalently bonded thereto and at least one ester, amide, imide,
     or thioester group covalently bonded thereto, said colorant being soluble or
     dispersible in the aqueous liquid vehicle.  Also disclosed is an ink composition
     comprising (a) an aqueous liquid vehicle, and (b) a colorant which is the
     reaction product of (1) an anhydride copolymer, (2) a chromogen having one
     and only one group per mol. selected from the group consisting of -OH,
     -SH, primary amino, and secondary amino, and (3) a material selected from
     the group consisting of nonchromogenic monofunctional alcs.,
     nonchromogenic monofunctional thiols, nonchromogenic monofunctional
     primary or secondary amines, and mixts. thereof, said colorant being soluble
     or dispersible in the aqueous liquid vehicle.
INCL 523160000; 347100000; 523161000
CC   42-12 (Coatings, Inks, and Related Products)
IT   Coloring materials
       Inks
        (aqueous inks containing colored anhydride polymers)
IT   27767-98-2
     RL: TEM (Technical or engineered material use); USES (Uses)
```

(C.I. 11343, chromogen; aqueous inks containing colored anhydride polymers)
IT **4424-82-2**, Disperse Blue 34
RL: TEM (Technical or engineered material use); USES (Uses)
(Disperse Blue 34, chromogen; aqueous inks containing colored anhydride polymers)
IT **81-47-0**, Disperse Blue 8
RL: TEM (Technical or engineered material use); USES (Uses)
(Disperse Blue 8, chromogen; aqueous inks containing colored anhydride polymers)
IT **84560-05-4**, Disperse Red 109
RL: TEM (Technical or engineered material use); USES (Uses)
(Disperse Red 109, chromogen; aqueous inks containing colored anhydride polymers)
IT **25473-34-1**, Disperse Red 156
RL: TEM (Technical or engineered material use); USES (Uses)
(Disperse Red 156, chromogen; aqueous inks containing colored anhydride polymers)
IT **62570-20-1**, Disperse Red 8
RL: TEM (Technical or engineered material use); USES (Uses)
(Disperse Red 8, chromogen; aqueous inks containing colored anhydride polymers)
IT **81367-85-3**, Disperse Red 97
RL: TEM (Technical or engineered material use); USES (Uses)
(Disperse Red 97, chromogen; aqueous inks containing colored anhydride polymers)
IT **61994-66-9**, Disperse Red 98
RL: TEM (Technical or engineered material use); USES (Uses)
(Disperse Red 98, chromogen; aqueous inks containing colored anhydride polymers)
IT 57-13-6DP, Urea, reaction products 91-66-7DP, N,N-Diethylaniline, reaction products 9003-11-6DP, Ethylene oxide-propylene oxide copolymer, ethylaminobenzaldehyde-terminated, reaction products 9011-13-6DP, Maleic anhydride-styrene copolymer, reaction products with monofunctional polyoxyalkylenes **882031-64-3P** **882031-65-4P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(aqueous inks containing colored anhydride polymers)
IT **2475-46-9**, Disperse Blue 3 **2872-52-8**, Disperse Red 1
3177-13-7, Disperse Blue 85 **3180-81-2**, Disperse Red 13
12270-13-2, Basic Blue 41 **17869-07-7**, Disperse Red 55
34231-26-0, Disperse Red 91
RL: TEM (Technical or engineered material use); USES (Uses)
(chromogen; aqueous inks containing colored anhydride polymers)
IT **27767-98-2**
RL: TEM (Technical or engineered material use); USES (Uses)
(C.I. 11343, chromogen; aqueous inks containing colored anhydride polymers)
RN 27767-98-2 HCAPLUS
CN β-Alanine, N-(2-cyanoethyl)-N-[4-[(2-cyano-4-nitrophenyl)azo]phenyl]-, methyl ester (9CI) (CA INDEX NAME)

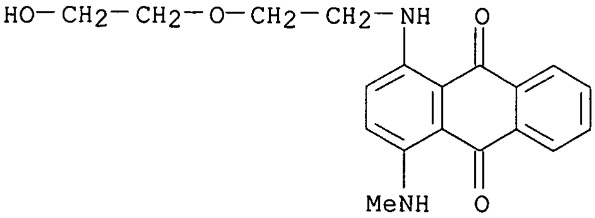


IT **4424-82-2**, Disperse Blue 34
RL: TEM (Technical or engineered material use); USES (Uses)

(Disperse Blue 34, chromogen; aqueous inks containing colored anhydride polymers)

RN 4424-82-2 HCAPLUS

CN 9,10-Anthracenedione, 1-[[2-(2-hydroxyethoxy)ethyl]amino]-4-(methylamino)- (9CI) (CA INDEX NAME)



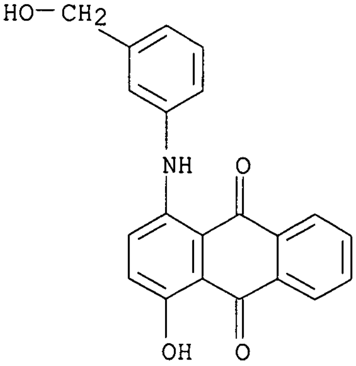
IT **81-47-0**, Disperse Blue 8

RL: TEM (Technical or engineered material use); USES (Uses)

(Disperse Blue 8, chromogen; aqueous inks containing colored anhydride polymers)

RN 81-47-0 HCAPLUS

CN 9,10-Anthracenedione, 1-hydroxy-4-[[3-(hydroxymethyl)phenyl]amino]- (9CI) (CA INDEX NAME)



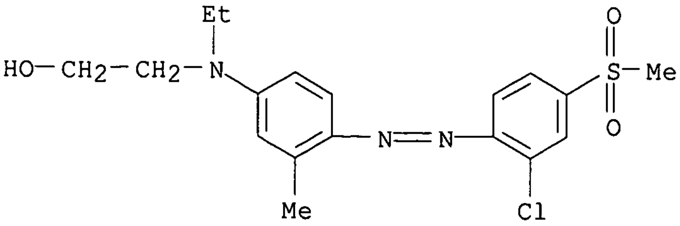
IT **84560-05-4**, Disperse Red 109

RL: TEM (Technical or engineered material use); USES (Uses)

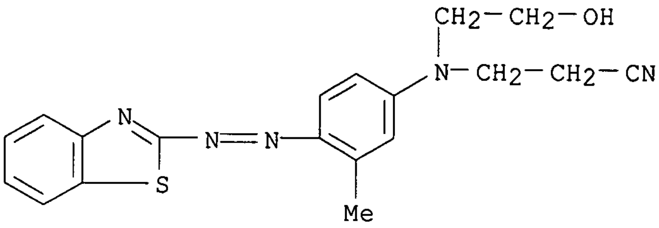
(Disperse Red 109, chromogen; aqueous inks containing colored anhydride polymers)

RN 84560-05-4 HCAPLUS

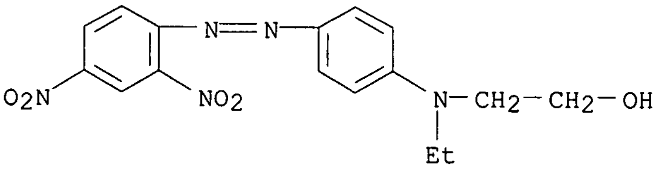
CN Ethanol, 2-[[4-[[2-chloro-4-(methylsulfonyl)phenyl]azo]-3-methylphenyl]ethylamino]- (9CI) (CA INDEX NAME)



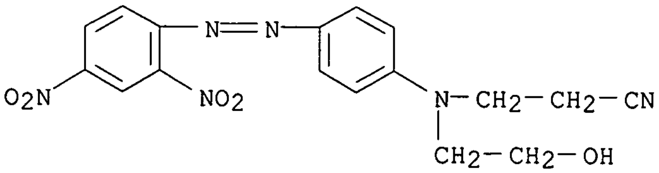
IT **25473-34-1**, Disperse Red 156
RL: TEM (Technical or engineered material use); USES (Uses)
(Disperse Red 156, chromogen; aqueous inks containing colored anhydride polymers)
RN 25473-34-1 HCAPLUS
CN Propanenitrile, 3-[[4-(2-benzothiazolylazo)-3-methylphenyl](2-hydroxyethyl)amino]- (9CI) (CA INDEX NAME)



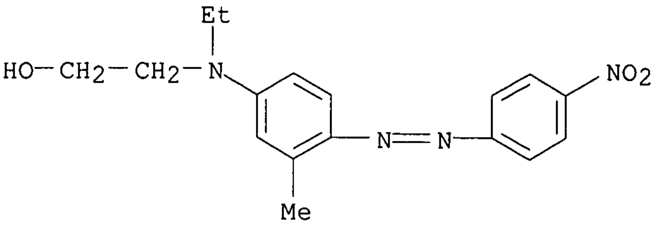
IT **62570-20-1**, Disperse Red 8
RL: TEM (Technical or engineered material use); USES (Uses)
(Disperse Red 8, chromogen; aqueous inks containing colored anhydride polymers)
RN 62570-20-1 HCAPLUS
CN Ethanol, 2-[[4-[(2,4-dinitrophenyl)azo]phenyl]ethylamino]- (9CI) (CA INDEX NAME)



IT **81367-85-3**, Disperse Red 97
RL: TEM (Technical or engineered material use); USES (Uses)
(Disperse Red 97, chromogen; aqueous inks containing colored anhydride polymers)
RN 81367-85-3 HCAPLUS
CN Propanenitrile, 3-[[4-[(2,4-dinitrophenyl)azo]phenyl](2-hydroxyethyl)amino]- (9CI) (CA INDEX NAME)



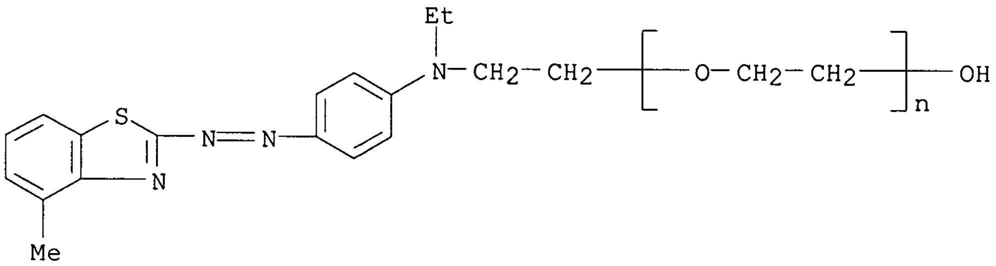
IT **61994-66-9**, Disperse Red 98
RL: TEM (Technical or engineered material use); USES (Uses)
(Disperse Red 98, chromogen; aqueous inks containing colored anhydride polymers)
RN 61994-66-9 HCAPLUS
CN Ethanol, 2-[ethyl[3-methyl-4-[(4-nitrophenyl)azo]phenyl]amino]- (9CI) (CA INDEX NAME)



IT **882031-64-3P 882031-65-4P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(aqueous inks containing colored anhydride polymers)
RN 882031-64-3 HCAPLUS
CN 2,5-Furandione, polymer with ethenylbenzene, ester with α-[2-[ethyl[4-[(4-methyl-2-benzothiazolyl)azo]phenyl]amino]ethyl]-ω-hydroxypoly(oxy-1,2-ethanediyl) and α-undecyl-ω-hydroxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

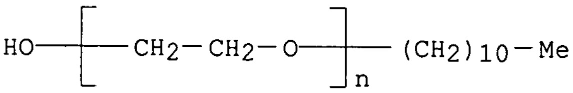
CM 1

CRN 722444-56-6
CMF (C2 H4 O)n C18 H20 N4 O S
CCI PMS



CM 2

CRN 34398-01-1
CMF (C2 H4 O)n C11 H24 O
CCI PMS

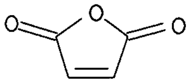


CM 3

CRN 9011-13-6
CMF (C8 H8 . C4 H2 O3)x
CCI PMS

CM 4

CRN 108-31-6
CMF C4 H2 O3



CM 5

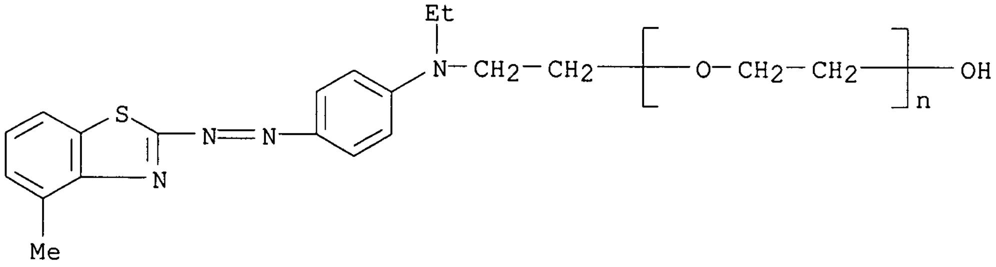
CRN 100-42-5
CMF C8 H8

$H_2C{=}CH{-}Ph$

RN 882031-65-4 HCAPLUS
CN 2,5-Furandione, polymer with ethenylbenzene, 2-[2-(2-methoxymethylethoxy)methylethoxy]methylethyl ester, ester with α-[2-[ethyl[4-[(4-methyl-2-benzothiazolyl)azo]phenyl]amino]ethyl]-ω-hydroxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 722444-56-6
CMF (C2 H4 O)n C18 H20 N4 O S
CCI PMS



CM 2

CRN 25498-49-1
CMF C10 H22 O4
CCI IDS

$HO{-}CH_2{-}CH_2{-}O{-}CH_2{-}CH_2{-}O{-}CH_2{-}CH_2{-}OMe$

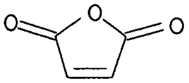
3 (D1—Me)

CM 3

CRN 9011-13-6
CMF (C8 H8 . C4 H2 O3)x
CCI PMS

CM 4

CRN 108-31-6
CMF C4 H2 O3



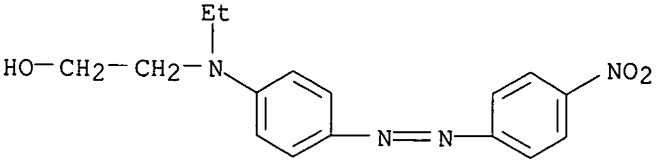
CM 5

CRN 100-42-5
CMF C8 H8

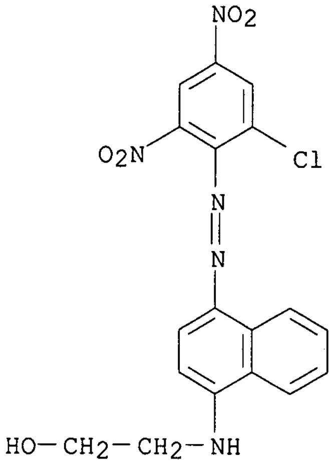
$H_2C{=}CH{-}Ph$

IT **2475-46-9**, Disperse Blue 3 **2872-52-8**, Disperse Red 1
3177-13-7, Disperse Blue 85 **3180-81-2**, Disperse Red 13
12270-13-2, Basic Blue 41 **17869-07-7**, Disperse Red 55
34231-26-0, Disperse Red 91
RL: TEM (Technical or engineered material use); USES (Uses)
(chromogen; aqueous inks containing colored anhydride polymers)
RN 2475-46-9 HCAPLUS
CN C.I. Disperse Blue 3 (9CI) (CA INDEX NAME)

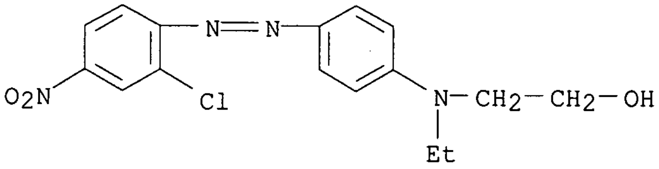
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 2872-52-8 HCAPLUS
CN Ethanol, 2-[ethyl[4-[(4-nitrophenyl)azo]phenyl]amino]- (9CI) (CA INDEX NAME)



RN 3177-13-7 HCAPLUS
CN Ethanol, 2-[[4-[(2-chloro-4,6-dinitrophenyl)azo]-1-naphthalenyl]amino]- (9CI) (CA INDEX NAME)



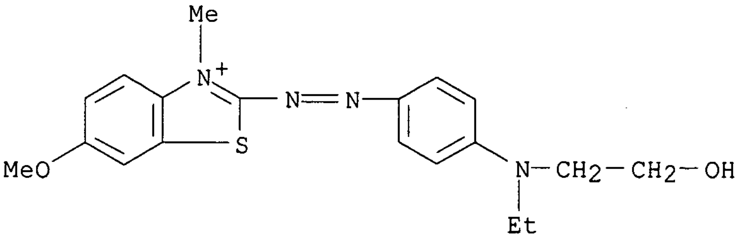
RN 3180-81-2 HCAPLUS
CN Ethanol, 2-[[4-[(2-chloro-4-nitrophenyl)azo]phenyl]ethylamino]- (9CI) (CA INDEX NAME)



RN 12270-13-2 HCAPLUS
CN Benzothiazolium, 2-[[4-[ethyl(2-hydroxyethyl)amino]phenyl]azo]-6-methoxy-3-methyl-, methyl sulfate (salt) (9CI) (CA INDEX NAME)

CM 1

CRN 38901-82-5
CMF C19 H23 N4 O2 S

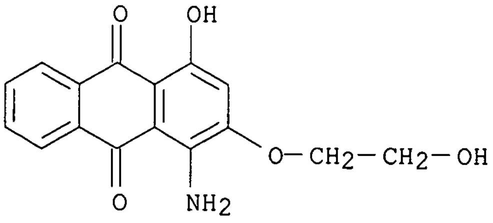


CM 2

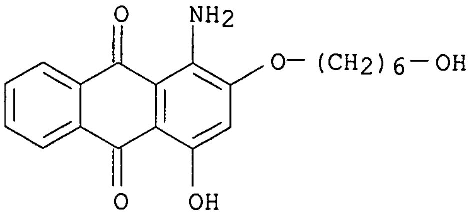
CRN 21228-90-0
CMF C H3 O4 S

$Me-O-SO_3^-$

RN 17869-07-7 HCAPLUS
CN 9,10-Anthracenedione, 1-amino-4-hydroxy-2-(2-hydroxyethoxy)- (9CI) (CA INDEX NAME)



RN 34231-26-0 HCAPLUS
CN 9,10-Anthracenedione, 1-amino-4-hydroxy-2-[(6-hydroxyhexyl)oxy]- (9CI) (CA INDEX NAME)



L47 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:1118847 HCAPLUS
DN 142:58221
TI Water-soluble polymeric dye
IN Tijssen, Pascal Maria Hubert Pierre
PA DSM IP Assets B.V., Neth.
SO Eur. Pat. Appl., 22 pp.
CODEN: EPXXDW
DT Patent
LA English

```
FAN.CNT 1
     PATENT NO.          KIND   DATE       APPLICATION NO.        DATE
     ----------------    ----   --------   --------------------   --------
PI   EP 1489144           A1    20041222   EP 2003-76907          20030618 <--
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
PRAI EP 2003-76907              20030618  <--
```

AB The invention relates to a water-soluble polymeric dye comprising an anionic or nonionic chromophore unit covalently bound to a polymer backbone, wherein the polymer backbone is based on a water-soluble anionic or nonionic polymer and the polymer backbone comprises (a) at least 2.5 anionic functional groups or at least 5 hydroxyl functional groups, or a combination thereof, per average chromophore unit for an anionic chromophore unit or (b) at least 3.5 anionic functional groups or at least 7 hydroxyl functional groups, or a combination thereof, per average chromophore unit, for an nonionic chromophore unit. The polymeric dye according to the invention has good removability by washing from from skin and fabrics, and can be applied in paints and **ink** formulations for use markers and **ink** jet cartridges. A typical dye was manufactured by heating 10 g maleic anhydride-styrene copolymer (Mw 1800) with 1.73 g Disperse Red 13 in dioxane in the presence of DMAP at reflux for 48 h adding 7.2 g 50% NaOH solution, and heating at reflux for 30 min.

IC ICM C09B0069-10

CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

ST water soluble polymer dye adduct paint jet printing **ink**; maleic anhydride styrene copolymer dye adduct manuf

IT **Inks**

(marking; water-soluble polymeric dye with good removability from skin and fabrics by washing for **inks**)

IT **Azo dyes**

(water-soluble polymeric dye with good removability from skin and fabrics by washing)

IT **Inks**

(water-soluble polymeric dye with good removability from skin and fabrics by washing for **inks**)

IT 121-47-1DP, 3-Aminobenzenesulfonic acid, azo dye derivs. with maleic anhydride-styrene copolymer and methylphenylalanine 136-95-8DP, 2-Aminobenzothiazole, azo dye derivs. with maleic anhydride-styrene copolymer and methylphenylalanine **730-40-5DP**, Disperse Orange 3, reaction products with maleic anhydride-styrene copolymer 3334-56-3DP, N-Methyl-N-phenyl-β-alanine, reaction products with maleic anhydride-styrene copolymer and diazotized aromatic amines 6373-73-5DP, Disperse Yellow 9, reaction products with maleic anhydride-styrene copolymer 13443-84-0DP, 4-(2-Benzothiazolylazo)aniline, reaction products with maleic anhydride-styrene copolymer 82855-20-7DP, 4-(2-Thiazolylazo)aniline, reaction products with maleic anhydride-styrene copolymer 106209-33-0DP, SMA 1000, reaction products with dyes 362603-93-8DP, Diisopropanolamine-succinic anhydride copolymer, reaction products with methylphenylalanine and diazotized aromatic amines 810661-57-5DP, 4-[4-(Carboxymethyl)-2-thiazolylazo]aniline, reaction products with maleic anhydride-styrene copolymer **811438-35-4P**

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(water-soluble polymeric dye with good removability from skin and fabrics by washing)

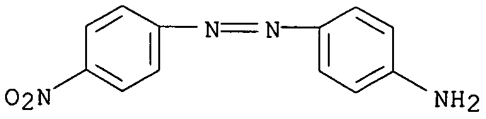
IT **730-40-5DP**, Disperse Orange 3, reaction products with maleic anhydride-styrene copolymer **811438-35-4P**

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(water-soluble polymeric dye with good removability from skin and fabrics by washing)

RN 730-40-5 HCAPLUS

CN Benzenamine, 4-[(4-nitrophenyl)azo]- (9CI) (CA INDEX NAME)

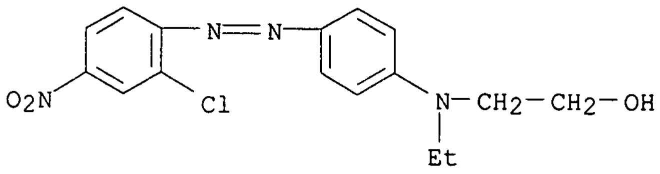


RN 811438-35-4 HCAPLUS

CN 2,5-Furandione, polymer with ethenylbenzene, 2-[[4-[(2-chloro-4-nitrophenyl)azo]phenyl]ethylamino]ethyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 3180-81-2
CMF C16 H17 Cl N4 O3

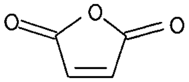


CM 2

CRN 9011-13-6
CMF (C8 H8 . C4 H2 O3)x
CCI PMS

CM 3

CRN 108-31-6
CMF C4 H2 O3



CM 4

CRN 100-42-5
CMF C8 H8

$H_2C{=}CH-Ph$

RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Agfa Gevaert	2002			WO 02072721 A	HCAPLUS
Basf Ag	1966			GB 1047554 A	
Bausch & Lomb	1990			EP 0396376 A	HCAPLUS
Bayer Ag	1990			EP 0361229 A	HCAPLUS
Bayer Ag	1992			EP 0513560 A	HCAPLUS
Bunes, L	1982			US 4316918 A	HCAPLUS
Clark, D	1987			US 4704440 A	HCAPLUS
Dawson, D	1980			US 4233328 A	HCAPLUS
Hewlett Packard Co	1993			EP 0540248 A	HCAPLUS
Kurita Water Ind Ltd	1992			EP 0485882 A	HCAPLUS
Melvin, O	1978			US 4096134 A	
Nalco Chemical Co	1991			EP 0449505 A	HCAPLUS
Shinoki, H	1990			US 4966607 A	HCAPLUS

Swanson, S	1983		US 4381185 A	HCAPLUS
Victor, C	1970		US 3507850 A	HCAPLUS
Wang, P	1977		US 4051138 A	HCAPLUS

L47 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1998:781881 HCAPLUS

DN 130:145740

TI Modification of push-pull molecules and polymers for higher nonlinear refraction and lower linear and nonlinear absorptions

AU Cherioux, F.; Audebert, P.; Maillotte, H.

CS Laboratoire de Chimie et Electrochimie Moleculaire, Universite de Franche-Comte, Besancon, 25030, Fr.

SO Proceedings of SPIE-The International Society for Optical Engineering (**1998**), 3469(Organic-Inorganic Hybrid Materials for Photonics), 182-190
CODEN: PSISDG; ISSN: 0277-786X

PB SPIE-The International Society for Optical Engineering

DT Journal

LA English

AB Starting from a simple phys. model, we propose a new scheme for increasing the fast nonlinear refractive response while decreasing linear and nonlinear absorptions in classical push-pull mols. This effect is due to the reduction of donor group strength of classical push-pull mols. It is confirmed by multi-channel Z-scan measurements and by semi-empirical computations. We have functionalized a copolymer, poly(maleic anhydride-co-octadecene), with these chromophores and measured nonlinear refraction and absorption with respect to the chromophore nature.

CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 36

IT **2872-52-8**, Disperse Red 1
RL: RCT (Reactant); RACT (Reactant or reagent)
(8poly(maleic anhydride-co-octadecene) functionalized with third-order nonlinear chromophore)

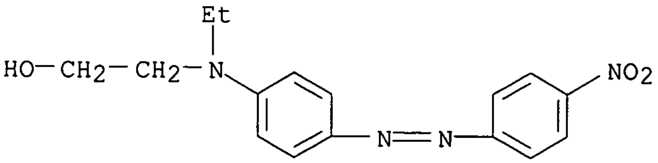
IT 4338-06-1P 24094-01-7P 31489-18-6P 220098-70-4P **220114-25-0P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(third-order nonlinear optical properties)

IT **730-40-5**, Disperse Orange 3
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(third-order nonlinear optical properties, and chromophore side chain of poly(maleic anhydride-co-octadecene))

IT **2872-52-8**, Disperse Red 1
RL: RCT (Reactant); RACT (Reactant or reagent)
(8poly(maleic anhydride-co-octadecene) functionalized with third-order nonlinear chromophore)

RN 2872-52-8 HCAPLUS

CN Ethanol, 2-[ethyl[4-[(4-nitrophenyl)azo]phenyl]amino]- (9CI) (CA INDEX NAME)



IT **220114-25-0P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

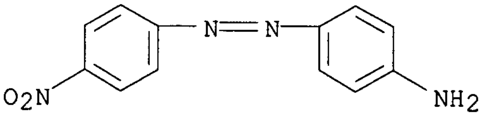
(third-order nonlinear optical properties)

RN 220114-25-0 HCAPLUS

CN 2,5-Furandione, polymer with 4-[(4-nitrophenyl)azo]benzenamine and 1-octadecene (9CI) (CA INDEX NAME)

CM 1

CRN 730-40-5
CMF C12 H10 N4 O2



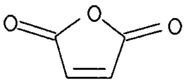
CM 2

CRN 112-88-9
CMF C18 H36

$H_2C{=}CH-(CH_2)_{15}-Me$

CM 3

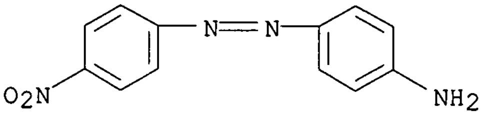
CRN 108-31-6
CMF C4 H2 O3



IT **730-40-5**, Disperse Orange 3
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(third-order nonlinear optical properties, and chromophore side chain of poly(maleic anhydride-co-octadecene))

RN 730-40-5 HCAPLUS

CN Benzenamine, 4-[(4-nitrophenyl)azo]- (9CI) (CA INDEX NAME)

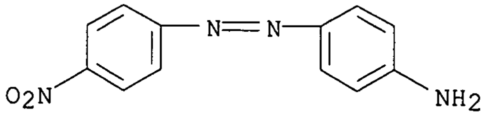


RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Cherioux, F	1997	9	2921	Chem Mater	HCAPLUS
Hernandez, F	1997	134	529	Opt Comm	HCAPLUS
Lawrence, B	1994	30	447	Electro Lett	HCAPLUS

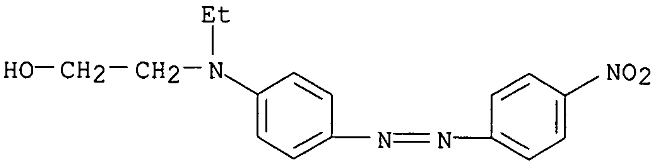
Marcano, A	1996	21	101	Opt Lett	
Marder, S	1997	276	1233	Science	HCAPLUS
Molyneux, S	1993	18	2093	Opt Lett	HCAPLUS
Nalwa, H	1997			Nonlinear Optics of	
Reddy, P	1997	62	2652	J Org Chem	HCAPLUS
Sheik-Bahae, M	1990	26	760	IEEE J Quantum Elect	HCAPLUS
Zhao, J	1997	6	109	J Nonlin Opt Phys Ma	HCAPLUS

L47 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1997:744499 HCAPLUS
DN 127:332148
TI New Third-Order Nonlinear Polymers Functionalized with Disperse Red and Disperse Orange Chromophores with Increased Stability
AU Cherioux, F.; Audebert, P.; Maillotte, H.; Grossard, L.; Hernandez, F. E.; Lacourt, A.
CS Laboratoire de Chimie et d'Electrochimie Moleculaire, Universite de Franche-Comte, Besancon, 25030, Fr.
SO Chemistry of Materials (**1997**), 9(12), 2921-2927
CODEN: CMATEX; ISSN: 0897-4756
PB American Chemical Society
DT Journal
LA English
AB New and very stable polymers with good optical third-order nonlinearities were prepared by condensation between a maleic anhydride-octadecene copolymer and the appropriate Disperse Red and Disperse Orange type chromophores. The nonlinear response of low concentration solns. of the polymers was determined using a new numerical Z-scan technique. The polymers are highly stable, and their nonlinear response is very reproducible, both under intense illumination and upon several repeated expts. over months. Especially the polymer where the Disperse Orange 3 chromophore is incorporated in the main chain through imide linkages displays both the highest refractive nonlinearity and almost no two-photon absorption. Its surprisingly higher nonlinear response with respect to the parent Disperse Orange 3 is demonstrated and discussed.
CC 37-5 (Plastics Manufacture and Processing)
Section cross-reference(s): 35, 36, 73
IT **730-40-5DP**, Disperse Orange 3, imide derivs. with maleic anhydride-1-octadecene copolymer 25266-02-8DP, Maleic anhydride-1-octadecene copolymer, imide derivs. with Disperse Orange 3
197663-77-7P **197663-78-8P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and nonlinear response of dye functionalized maleic anhydride-octadecene copolymers)
IT **730-40-5DP**, Disperse Orange 3, imide derivs. with maleic anhydride-1-octadecene copolymer **197663-77-7P**
197663-78-8P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and nonlinear response of dye functionalized maleic anhydride-octadecene copolymers)
RN 730-40-5 HCAPLUS
CN Benzenamine, 4-[(4-nitrophenyl)azo]- (9CI) (CA INDEX NAME)



RN 197663-77-7 HCAPLUS

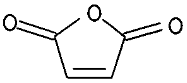
```
CN   2,5-Furandione, polymer with 1-octadecene, 2-[ethyl[4-[(4-
     nitrophenyl)azo]phenyl]amino]ethyl ester (9CI)  (CA INDEX NAME)

     CM   1

     CRN  2872-52-8
     CMF  C16 H18 N4 O3
```



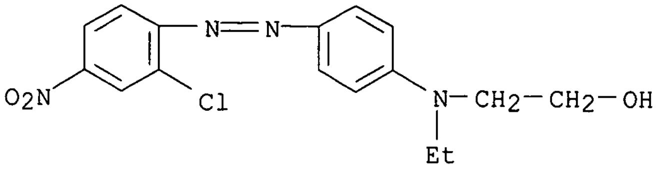
```
     CM   2

     CRN  25266-02-8
     CMF  (C18 H36 . C4 H2 O3)x
     CCI  PMS

          CM   3

          CRN  112-88-9
          CMF  C18 H36
```

$H_2C{=}CH{-}(CH_2)_{15}{-}Me$

```
          CM   4

          CRN  108-31-6
          CMF  C4 H2 O3
```



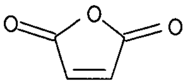
```
RN   197663-78-8  HCAPLUS
CN   2,5-Furandione, polymer with 1-octadecene, 2-[[4-[(2-chloro-4-
     nitrophenyl)azo]phenyl]ethylamino]ethyl ester (9CI)  (CA INDEX NAME)

     CM   1

     CRN  3180-81-2
     CMF  C16 H17 Cl N4 O3
```



```
     CM   2

     CRN  25266-02-8
     CMF  (C18 H36 . C4 H2 O3)x
     CCI  PMS

          CM   3

          CRN  112-88-9
          CMF  C18 H36
```

$H_2C{=}CH{-}(CH_2)_{15}{-}Me$

```
          CM   4

          CRN  108-31-6
          CMF  C4 H2 O3
```



```
RETABLE
   Referenced Author    |Year | VOL | PG   | Referenced Work     | Referenced
         (RAU)          |(RPY)|(RVL)|(RPG) |       (RWK)         | File
======================+=====+=====+======+====================+===========
Anon                  |1993 |     |      |Observatoire Francai|
Barrett, C            |1995 |7    |899   |Chem Mater          |HCAPLUS
Barzoukas, M          |1996 |257  |531   |Chem Phys Lett      |HCAPLUS
Bauer, S              |1993 |63   |2018  |Appl Phys Lett      |HCAPLUS
Bredas, J             |1994 |94   |243   |Chem Rev            |HCAPLUS
Burland, D            |1994 |94   |31    |Chem Rev            |HCAPLUS
Chemla, D             |1987 |     |      |Nonlinear Optical Pr|
Chen, M               |1992 |25   |4032  |Macromolecules      |HCAPLUS
Green, B              |1987 |58   |2750  |Phys Rev Lett       |
Griesmar, P           |1991 |     |205   |Mol Eng             |
Gunter, P             |1988 |1,2  |      |Photorefractive Mate|
Hattori, T            |1992 |17   |1560  |Opt Lett            |HCAPLUS
Hernandez, F          |1997 |134  |529   |Opt Commun          |HCAPLUS
Kajzar, F             |1993 |6    |181   |Nonlinear Opt       |HCAPLUS
Kajzar, F             |1992 |     |595   |Polymers for Lightwa|HCAPLUS
Kobayashi, T          |1992 |50   |565   |Synth Met           |HCAPLUS
Lantz, E              |1993 |     |300   |Laser optics 93, Tec|
Levenson, R           |1995 |     |436   |Advances in Organic |HCAPLUS
Lyang, Z              |1995 |7    |941   |Chem Mater          |
```

Marcano, A	1996	21	101	Opt Lett	
Marcano, A	1996	2370	405	Proc SPIE-Int Soc Op	
Marks, T	1995	34	155	Angew Chem, Int Ed E	HCAPLUS
Messier, J	1992	2	53	Nonlinear Opt	
Meyers, F	1994	116	10703	J Am Chem Soc	HCAPLUS
Molyneux, S	1993	18	2093	Opt Lett	HCAPLUS
Nalwa, H	1997		611	Nonlinear Optics of	HCAPLUS
Nunzi, J	1987	62	2198	J Appl Phys	HCAPLUS
Peng, Z	1994	116	6003	J Am Chem Soc	
Peng, Z	1994	27	2638	Macromolecules	HCAPLUS
Petrov, D	1995	20	554	Opt Lett	HCAPLUS
Prasad, P	1988			Nonlinear Optical an	
Robello, D	1990	28	1	J Polym Sci, A: Poly	HCAPLUS
Sheik-Bahae, M	1990	26	760	IEEE J Quantum Elect	HCAPLUS
Toussaere, E	1991	1	349	Nonlinear Opt	HCAPLUS
Vitrant, G	1994	8	251	Nonlinear Opt	HCAPLUS
Ward, J	1965	37	1	Rev Mod Phys	
Weaire, D	1974	4	331	Opt Lett	
Yang, L	1992	17	323	Opt Lett	HCAPLUS
Yang, S	1994	27	5858	Macromolecules	HCAPLUS
Ye, C	1987	20	2322	Macromolecules	HCAPLUS
Ye, C	1988	21	2899	Macromolecules	HCAPLUS
Zyss, J	1993			Molecular Nonlinear	

L47 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1997:554556 HCAPLUS

DN 127:240576

TI Thermal stability of NLO effects in polymers

AU Yang, G. M.

CS Institute for Electroacoustics, Technical University Darmstadt, Darmstadt, D-64283, Germany

SO Proceedings - International Symposium on Electrets, 9th, Shanghai, Sept. 25-30, 1996 (**1996**), 425-430. Editor(s): Xia, Zhongfu; Zhang, Hongyan. Publisher: Institute of Electrical and Electronics Engineers, New York, N. Y.
CODEN: 64WHAV

DT Conference

LA English

AB Nonlinear optical (NLO) effects and their thermal stability in different polymers after corona or electron-beam poling were studied by electrooptical coefficient measurement and by pyroelec. thermal anal. Tested materials are a guest-host polymer of Disperse Red 1 (DR1) and polymethylmethacrylate (PMMA), a side-chain polymer of PMMA with DR1 side groups, a side-chain styrene-maleic anhydride co-polymer with DR1 side groups, and a cross-linked side-chain polymer Red-Acid Magly. NLO effects in electron-beam poled samples are comparable with those in corona poled samples, while the thermal stability of the electron-beam poled materials is still low in the present stage. The reasons of the lower thermal stability of electron-beam poled samples and a possible way to overcome it are discussed.

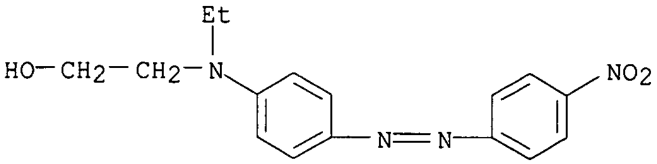
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 36

IT **2872-52-8**, Disperse Red 1
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(thermal stability of NLO effects in polymers)

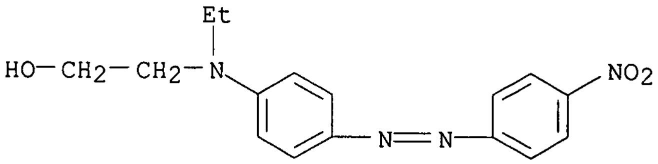
IT 119989-05-8 166656-28-6 **195440-51-8**
RL: PRP (Properties)
(thermal stability of NLO effects in polymers)

IT **2872-52-8**, Disperse Red 1

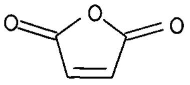
```
     RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
        (thermal stability of NLO effects in polymers)
RN   2872-52-8  HCAPLUS
CN   Ethanol, 2-[ethyl[4-[(4-nitrophenyl)azo]phenyl]amino]- (9CI)  (CA INDEX
     NAME)
```



```
IT   195440-51-8
     RL: PRP (Properties)
        (thermal stability of NLO effects in polymers)
RN   195440-51-8  HCAPLUS
CN   2,5-Furandione, polymer with ethenylbenzene and 2-[ethyl[4-[(4-
     nitrophenyl)azo]phenyl]amino]ethanol (9CI)  (CA INDEX NAME)

     CM   1

     CRN  2872-52-8
     CMF  C16 H18 N4 O3
```



```
     CM   2

     CRN  108-31-6
     CMF  C4 H2 O3
```

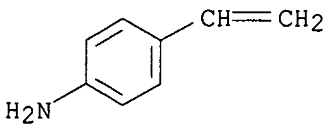


```
     CM   3

     CRN  100-42-5
     CMF  C8 H8
```

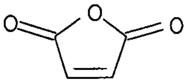
$H_2C{=}CH-Ph$

```
L47  ANSWER 6 OF 8  HCAPLUS  COPYRIGHT 2006 ACS on STN
```

```
AN   1996:323882  HCAPLUS
DN   125:103902
TI   Method and means for detecting polyhydroxyl compounds
IN   Russell, Anthony P.; Zepp, Charles W.
PA   USA
SO   U.S., 16 pp., Cont.-in-part of U.S. Ser. No. 854,301, abandoned.
     CODEN: USXXAM
DT   Patent
LA   English
FAN.CNT 2
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     ---------------     ----   --------    --------------------   --------
PI   US 5512246           A     19960430    US 1993-153763         19931117 <--
     US 5137833           A     19920811    US 1989-410657         19890921 <--
PRAI US 1989-410657       A2    19890921  <--
     US 1992-854301       B2    19920320  <--
AB   Methods and compns. for detecting and measuring the concentration in solution of
     polyhydroxyl compds., such as sugars.  The invention makes use of certain
     dye compns. that, when linked to a derivative of boronic acid (or boronate
     ion), arsenious acid (or arsenite ion), or germanic acid (or germanate
     ion), exhibit quant. responses to the presence of polyhydroxyl species.
IC   ICM  C09B0069-10
     ICS  G01N0033-52; G01N0033-66
INCL 422057000
CC   80-6 (Organic Analytical Chemistry)
     Section cross-reference(s): 41
IT   Dyes
     RL: ANST (Analytical study); PREP (Preparation); USES (Uses)
        (preparation and properties of dyes for determination of sugars)
IT   9003-53-6DP, reaction products with m-Aminophenylboronic acid
     132357-12-1DP, reaction products with m-Aminophenylboronic acid
     178752-80-2DP, reaction products with m-Aminophenylboronic acid
     RL: PEP (Physical, engineering or chemical process); SPN (Synthetic
     preparation); PREP (Preparation); PROC (Process)
        (preparation and coupling with diazotized m-aminophenylboronic acid for
        preparation of dyes for detection and determination of sugars)
IT   132357-12-1DP, reaction products with m-Aminophenylboronic acid
     RL: PEP (Physical, engineering or chemical process); SPN (Synthetic
     preparation); PREP (Preparation); PROC (Process)
        (preparation and coupling with diazotized m-aminophenylboronic acid for
        preparation of dyes for detection and determination of sugars)
RN   132357-12-1  HCAPLUS
CN   2,5-Furandione, polymer with 4-ethenylbenzenamine (9CI)  (CA INDEX NAME)

     CM   1

     CRN  1520-21-4
     CMF  C8 H9 N
```

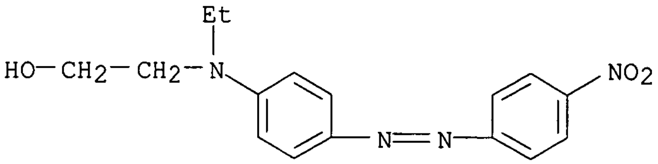


```
     CM   2
     CRN  108-31-6
     CMF  C4 H2 O3
```

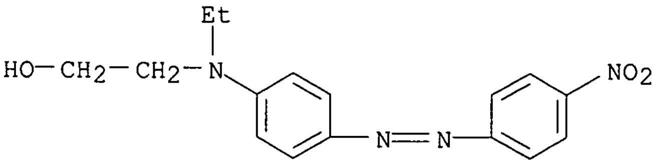


```
L47  ANSWER 7 OF 8  HCAPLUS  COPYRIGHT 2006 ACS on STN
AN   1994:231409  HCAPLUS
DN   120:231409
TI   Poly(maleic anhydride) copolymers with side chains exhibiting nonlinear
     optical response
IN   McCulloch, Iain; Leslie, Thomas M.
PA   Hoechst Celanese Corp., USA
SO   U.S., 9 pp.
     CODEN: USXXAM
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.          KIND   DATE       APPLICATION NO.        DATE
     ---------------     ----   --------   --------------------   --------
PI   US 5212250           A     19930518   US 1991-761115         19910917 <--
PRAI US 1991-761115             19910917  <--
GI




* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY -  AVAILABLE VIA OFFLINE PRINT *

AB   The title copolymers are described by the general formulas I, II, III, and
     IV (R = H or a C1-10 hydrocarbyl substituent; R1 = a C1-4 alkoxyl or C6-12
     aromatic substituent; D = -O-, or -NH-; Y = a pendent organic side chain
containing
     a conjugated structure and an electron-withdrawing group selected from
     -NO2, -CN, -CF3, -CH:C(CN)2, -C(CN):C(CN)2, and -SO2CF3 so that the D-Y
     moiety exhibits nonlinear optical properties; L = a crosslinking branch
     with a 2-20 atom chain length; X = an electron-donating group selected
     from -O-, -S-, and -NR2-; R2 = H or a C1-4 alkyl; Z = an
     electron-withdrawing group selected from the same set as Y; m, m1, m2 =
     integers; m1 + m2 ≥ 10; the m1 monomer comprises 10-90 mol% of the
     total m1 + m2 units; n = an integer in the range 2-10; and n1 = an integer
     in the range 0-2).  Optical media comprising films of the copolymers are
     also described.
IC   ICM  C08F0267-04
INCL 525276000
CC   73-10 (Optical, Electron, and Mass Spectroscopy and Other Related
     Properties)
     Section cross-reference(s): 35, 36
IT   2872-52-8P   79252-67-8P   122008-76-8P
     RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
     (Reactant or reagent)
        (preparation and reaction of, in nonlinear optical material preparation)
IT   153422-10-7P 153422-11-8P 153422-13-0P
     RL: TEM (Technical or engineered material use); FORM (Formation,
     nonpreparative); PREP (Preparation); USES (Uses)
        (preparation and use of, as nonlinear optical material)
```

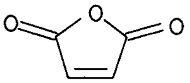
```
IT   2872-52-8P
     RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
     (Reactant or reagent)
        (preparation and reaction of, in nonlinear optical material preparation)
RN   2872-52-8  HCAPLUS
CN   Ethanol, 2-[ethyl[4-[(4-nitrophenyl)azo]phenyl]amino]- (9CI)  (CA INDEX
     NAME)
```



```
IT   153422-10-7P 153422-11-8P 153422-13-0P
     RL: TEM (Technical or engineered material use); FORM (Formation,
     nonpreparative); PREP (Preparation); USES (Uses)
        (preparation and use of, as nonlinear optical material)
RN   153422-10-7  HCAPLUS
CN   2,5-Furandione, polymer with ethenylbenzene, 2-[ethyl[4-[(4-
     nitrophenyl)azo]phenyl]amino]ethyl ester (9CI)  (CA INDEX NAME)

     CM   1

     CRN  2872-52-8
     CMF  C16 H18 N4 O3
```



```
     CM   2

     CRN  9011-13-6
     CMF  (C8 H8 . C4 H2 O3)x
     CCI  PMS

          CM   3

          CRN  108-31-6
          CMF  C4 H2 O3
```



```
          CM   4
```

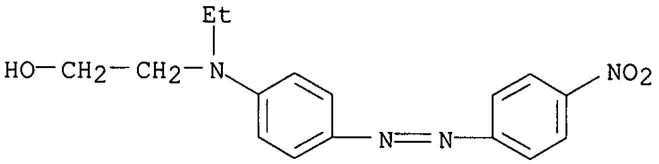
CRN 100-42-5
CMF C8 H8

$H_2C{=}CH{-}Ph$

RN 153422-11-8 HCAPLUS
CN 2,5-Furandione, polymer with 1-(ethenyloxy)butane, 2-[ethyl[4-[(4-nitrophenyl)azo]phenyl]amino]ethyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 2872-52-8
CMF C16 H18 N4 O3



CM 2

CRN 26298-63-5
CMF (C6 H12 O . C4 H2 O3)x
CCI PMS

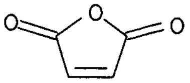
CM 3

CRN 111-34-2
CMF C6 H12 O

$n\text{-}BuO{-}CH{=}CH_2$

CM 4

CRN 108-31-6
CMF C4 H2 O3

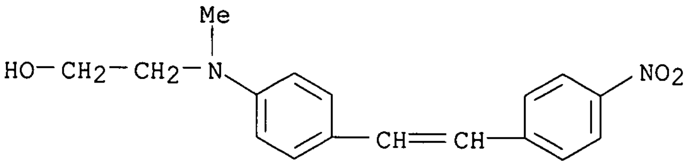


RN 153422-13-0 HCAPLUS
CN 2,5-Furandione, polymer with ethenylbenzene, 2-[methyl[4-[2-(4-nitrophenyl)ethenyl]phenyl]amino]ethyl ester (9CI) (CA INDEX NAME)

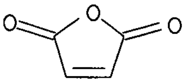
CM 1

CRN 122008-76-8

```
     CMF  C17 H18 N2 O3
```



```
     CM   2

     CRN  9011-13-6
     CMF  (C8 H8 . C4 H2 O3)x
     CCI  PMS

          CM   3

          CRN  108-31-6
          CMF  C4 H2 O3
```



```
          CM   4

          CRN  100-42-5
          CMF  C8 H8
```

$H_2C{=}CH-Ph$

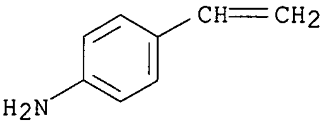
```
L47  ANSWER 8 OF 8  HCAPLUS  COPYRIGHT 2006 ACS on STN
AN   1991:104495  HCAPLUS
DN   114:104495
TI   Silica-coated synthetic resin products and their manufacture
IN   Takahashi, Tooru; Hatasawa, Takenobu; Yamaguchi, Kenzo; Myamoto, Kazuaki
PA   Sekisui Chemical Co. Ltd., Japan
SO   Jpn. Kokai Tokkyo Koho, 12 pp.
     CODEN: JKXXAF
DT   Patent
LA   Japanese
FAN.CNT 1
     PATENT NO.          KIND   DATE       APPLICATION NO.        DATE
     ---------------     ----   --------   --------------------   --------
PI   JP 02206624          A2    19900816   JP 1989-28294          19890206 <--
PRAI JP 1989-28294              19890206  <--
AB   The title products, with excellent adhesion, abrasion resistance,
     weatherability, and chemical resistance, are manufactured by coating carbonyl
     bond-containing polymer-based moldings with copolymers of primary or secondary
     amino-containing aminostyrenes and ≥1 monomer selected from
     α,β-unsatd. carboxylic anhydrides, silylated butadienes, and
```

alkoxysilane-containing vinyl monomers then with a SiO2 top layer. Thus, a polycarbonate plate was immersed in a primer containing p-aminostyrene 100, maleic anhydride 70, Bz2O2 10, and n-hexane 50 parts, heated at 80° for 30 min to form a 1-μm coating, and topped with a 5000-Å SiO2 coating using a silica gel solution to give a test piece showing good adhesion initially and after 200-h exposure to weather-o-meter, 1 h in boiling water, heated 50-h at 80°, and 3-wk at 65° and 95% relative humidity, resp.

IC ICM C08J0007-04
ICS B05D0007-02; B32B0009-00
CC 42-10 (Coatings, **Inks**, and Related Products)
IT **132357-12-1 132357-13-2 132357-14-3**
132357-15-4 132357-16-5 132357-17-6 132357-18-7 132357-19-8
RL: USES (Uses)
(primers, for silica coatings on plastics)
IT **132357-12-1 132357-13-2 132357-14-3**
RL: USES (Uses)
(primers, for silica coatings on plastics)
RN 132357-12-1 HCAPLUS
CN 2,5-Furandione, polymer with 4-ethenylbenzenamine (9CI) (CA INDEX NAME)

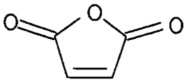
CM 1

CRN 1520-21-4
CMF C8 H9 N



CM 2

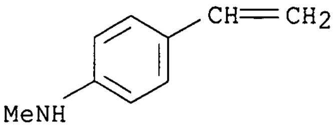
CRN 108-31-6
CMF C4 H2 O3



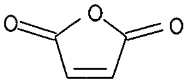
RN 132357-13-2 HCAPLUS
CN 2,5-Furandione, polymer with 4-ethenyl-N-methylbenzenamine (9CI) (CA INDEX NAME)

CM 1

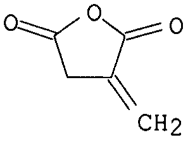
CRN 102877-42-9
CMF C9 H11 N



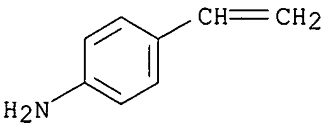
```
     CM   2

     CRN  108-31-6
     CMF  C4 H2 O3
```



```
RN   132357-14-3  HCAPLUS
CN   2,5-Furandione, dihydro-3-methylene-, polymer with 4-ethenylbenzenamine
     (9CI)  (CA INDEX NAME)

     CM   1

     CRN  2170-03-8
     CMF  C5 H4 O3
```



```
     CM   2

     CRN  1520-21-4
     CMF  C8 H9 N
```



```
=> => d l48 bib abs hitind hitstr retable tot

L48  ANSWER 1 OF 5  HCAPLUS  COPYRIGHT 2006 ACS on STN
AN   2002:55250  HCAPLUS
DN   136:332694
TI   Holographic data storage using azobenzene polymer
AU   Wang, Michael R.; Yang, Jianwen; Yan, Xingzhong; DeMasi, Ralph
```

CS Department of Electrical and Computer Engineering, University of Miami, USA

SO Proceedings of SPIE-The International Society for Optical Engineering (**2001**), 4512(Complex Adaptive Structures), 224-231
CODEN: PSISDG; ISSN: 0277-786X

PB SPIE-The International Society for Optical Engineering

DT Journal

LA English

AB It is well known that holog. data storage can significantly increase data storage capacity. However, the technol. maturity of holog. data storage is believed to be impeded by the lack of good holog. material that can be erased and recorded optically with almost unlimited rewriting cycles, large index modulation for large capacity multiplexed data recording, long lifetime, and immunity to destructive readout for archival applications. The performance of an azobenzene polymer is presented for holog. data storage applications. Initial expts. demonstrated that it is capable of satisfying many of above requirements. Recording of holograms without follow-up processing and being stable in application environment are its most attractive features. Applications of such material to other adaptive structures are possible.

CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT **153422-10-7**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(recording sensitivity and refractive index change of azobenzene-group containing polymer for holog. data storage applications)

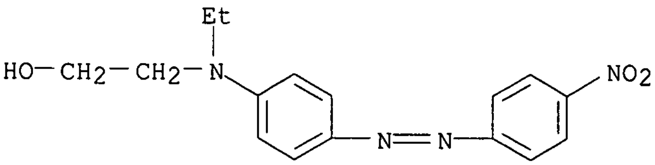
IT **153422-10-7**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(recording sensitivity and refractive index change of azobenzene-group containing polymer for holog. data storage applications)

RN 153422-10-7 HCAPLUS

CN 2,5-Furandione, polymer with ethenylbenzene, 2-[ethyl[4-[(4-nitrophenyl)azo]phenyl]amino]ethyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 2872-52-8
CMF C16 H18 N4 O3



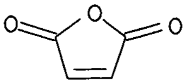
CM 2

CRN 9011-13-6
CMF (C8 H8 . C4 H2 O3)x
CCI PMS

CM 3

CRN 108-31-6

```
     CMF  C4 H2 O3
```

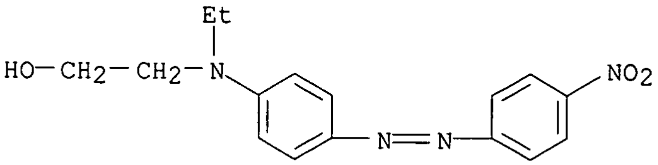


```
     CM   4

     CRN  100-42-5
     CMF  C8 H8

H2C══CH─ Ph

RETABLE
   Referenced Author    |Year | VOL | PG   | Referenced Work    | Referenced
        (RAU)           |(RPY)|(RVL)|(RPG) |       (RWK)        | File
======================+=====+=====+======+====================+===========
Agranat, A             |1988 |5    |1792  |J Opt Soc Am B      |HCAPLUS
Berg, R                |1996 |383  |505   |Nature              |HCAPLUS
Birge, R               |1994 |82   |348   |American Scientist  |
Burr, G                |1997 |22   |639   |Opt Lett            |HCAPLUS
Buse, K                |1998 |393  |665   |Nature              |HCAPLUS
Chang, C               |1999 |32   |5637  |Macromolecules      |HCAPLUS
Cipparrone, G          |1998 |23   |1505  |Opt Lett            |HCAPLUS
Coufal, H              |1998 |393  |628   |Nature              |HCAPLUS
Curtis, K              |1994 |33   |5396  |Appl Opt            |HCAPLUS
Dhar, L                |1998 |23   |1710  |Opt Lett            |HCAPLUS
Dhar, L                |1999 |24   |487   |Opt Lett            |
Erdogan, T             |1995 |34   |6738  |Appl Opt            |HCAPLUS
Fimia, A               |1993 |32   |3706  |Appl Opt            |HCAPLUS
Heanue, J              |1996 |21   |1615  |Opt Lett            |HCAPLUS
Heanue, J              |1994 |265  |749   |Science             |
Hesselink, L           |1998 |282  |1089  |Science             |HCAPLUS
IBM Holographic Optical|1996 |     |81    |Laser Focus World   |
Jackson, J             |1975 |     |310   |Classical Electrodyn|
Kogelnik, H            |1969 |48   |2909  |Bell Syst Tech J    |
Kume, T                |1998 |37   |334   |Appl Opt            |HCAPLUS
Lande, D               |1997 |22   |1722  |Opt Lett            |HCAPLUS
Li, H                  |1994 |33   |3764  |Appl Opt            |
Linke, R               |1998 |83   |661   |J Appl Phys         |HCAPLUS
Mok, F                 |1993 |18   |915   |Opt Lett            |HCAPLUS
Parthenopoulos, D      |1989 |     |843   |Science             |HCAPLUS
Pesach, B              |1998 |23   |642   |Opt Lett            |HCAPLUS
Psaltis, D             |1996 |2896 |      |Proc SPIE           |
Redmond, I             |1997 |22   |1189  |Opt Lett            |HCAPLUS
Schnoes, M             |1999 |24   |658   |Opt Lett            |HCAPLUS

L48  ANSWER 2 OF 5  HCAPLUS  COPYRIGHT 2006 ACS on STN
AN   1994:55230  HCAPLUS
DN   120:55230
TI   Nonlinear optical side-chain polymer with high thermal stability and its
     pyroelectric thermal analysis
AU   Bauer, S.; Ren, W.; Yilmaz, S.; Wirges, W.; Molzow, W. D.;
     Gerhard-Multhaupt, R.; Oertel, U.; Haenel, B.; Haeussler, L.; et al.
CS   Heinrich-Hertz-Inst. Nachrichtentech. Berlin, Berlin, D-10587, Germany
```

SO Applied Physics Letters (**1993**), 63(15), 2018-20
CODEN: APPLAB; ISSN: 0003-6951
DT Journal
LA English
AB Stable polymers with nonlinear optical side groups were synthesized by esterifying maleic anhydride-propylene copolymer with C.I. Disperse Red 1. After electrode poling under 135 V/μm at 185°, thermal stabilities were measured by pyroelec. and electrooptic thermal anal. and compared to a guest/host polymer of poly(Me methacrylate) and the same dye. The pyroelec. detected dipole orientation and the electrooptic activity of the side-chain polymers decreased only at >150°, and electrooptic r33 coeffs. of ≤6 pm/V were achieved at 780 nm even without optimizing the dye content.
CC 35-8 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 38, 41
IT **152286-81-2P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and thermally stable optical nonlinear properties of)
IT **152286-81-2P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and thermally stable optical nonlinear properties of)
RN 152286-81-2 HCAPLUS
CN 2,5-Furandione, polymer with 1-propene, 2-[ethyl[4-[(4-nitrophenyl)azo]phenyl]amino]ethyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 2872-52-8
CMF C16 H18 N4 O3



CM 2

CRN 25722-45-6
CMF (C4 H2 O3 . C3 H6)x
CCI PMS

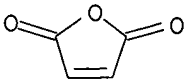
CM 3

CRN 115-07-1
CMF C3 H6

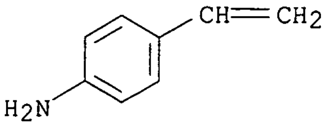
$H_3C-CH=CH_2$

CM 4

CRN 108-31-6
CMF C4 H2 O3



```
L48  ANSWER 3 OF 5  HCAPLUS  COPYRIGHT 2006 ACS on STN
AN   1989:155456  HCAPLUS
DN   110:155456
TI   Impact- and heat-resistant thermoplastic compositions
IN   Motai, Masaaki; Ito, Tetsuo; Uehara, Shotaro; Kimura, Shinichi
PA   Japan Synthetic Rubber Co., Ltd., Japan
SO   Jpn. Kokai Tokkyo Koho, 13 pp.
     CODEN: JKXXAF
DT   Patent
LA   Japanese
FAN.CNT 1
     PATENT NO.          KIND   DATE       APPLICATION NO.       DATE
     ---------------     ----   --------   --------------------  --------
PI   JP 63146948          A2    19880618   JP 1987-22523         19870204 <--
PRAI JP 1986-193998       A1    19860821  <--
AB   The title compns. comprise polyoxyphenylenes 5-60, polyamides and/or
     polyesters 2-88.5, olefin polymer 5-88.5, styrene and/or modified styrene
     0.5-50, impact modifiers 1-38% of unsatd. compds. containing carboxyl,
     anhydride, epoxy, hydroxyl, and amino groups, and peroxides.  Thus, a
     mixture of poly(2,6-xylenol) 45, styrene-glycidyl methacrylate mixture 2, JSR
     EP 020 6.6, maleic anhydride 2, and a peroxide 0.5 parts was kneaded,
     blended with 23.2 parts nylon 66 and 23.2 parts polypropylene, and
     injection-molded to give a sample having Izod impact strength 22 kg-cm/cm,
     heat distortion temperature 145°, and good workability.
IC   ICM  C08L0023-00
     ICS  C08K0005-05; C08K0005-09; C08K0005-14; C08K0005-15; C08K0005-17;
          C08L0023-00; C08L0067-00; C08L0071-04; C08L0077-00
CC   37-6 (Plastics Manufacture and Processing)
     Section cross-reference(s): 3, 9
IT   100-42-5D, polymer with glycidyl methacrylate, butadiene-styrenerubber and
     maleic anhydride   106-91-2D, polymer with styrene-butadiene rubber,
     maleic anhydride and styrene   108-31-6D, 2,5-Furandione, polymer with
     rubber, styrene and glycidyl methacrylate   106177-14-4   106642-96-0
     119864-51-6 119896-86-5   119896-87-6   119896-88-7
     119896-89-8   119907-33-4
     RL: USES (Uses)
        (polyoxyphenylene blend, heat- and impact-resistant)
IT   119896-86-5
     RL: USES (Uses)
        (polyoxyphenylene blend, heat- and impact-resistant)
RN   119896-86-5  HCAPLUS
CN   2,5-Furandione, polymer with ethene, 4-ethenylbenzenamine, ethenylbenzene
     and 1-propene, graft (9CI)  (CA INDEX NAME)

     CM   1

     CRN  1520-21-4
     CMF  C8 H9 N
```



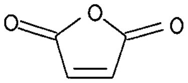
CM 2

CRN 115-07-1
CMF C3 H6

$H_3C-CH=CH_2$

CM 3

CRN 108-31-6
CMF C4 H2 O3



CM 4

CRN 100-42-5
CMF C8 H8

$H_2C=CH-Ph$

CM 5

CRN 74-85-1
CMF C2 H4

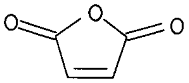
$H_2C=CH_2$

L48 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1973:58965 HCAPLUS
DN 78:58965
TI Polymer effect on electron-donating character of polymeric donor. I. Formation of charge-transfer complex between polymers containing N,N-dimethylaniline group and maleic anhydride
AU Iwatsuki, Shouji; Aria, Kiyotaka
CS Fac. Eng., Nagoya Univ., Nagoya, Japan
SO Journal of Polymer Science, Polymer Chemistry Edition (**1972**),

10(11), 3329-45
CODEN: JPLCAT; ISSN: 0449-296X
DT Journal
LA English
AB Kinetics of charge-transfer complex formation between N,N-dimethyl-p-aminostyrene-styrene copolymer (I) [24936-46-7] and maleic anhydride [108-31-6] and uv spectra of the complex indicated that the electron-donating character of the dimethyl aniline group increased with increasing number of groups attached to 1 polymer chain and that among neighboring functional groups on 1 polymer chain, there is an interaction which may be regarded as a kind of polymer effect. The wavelength (λmax) of the lowest energy of the charge-transfer transition for N,N-dimethyl-p-aminostyrene (II) units or their complex formation association constant (KCT) increased with the mean sequence length (μASt) of the II units. The differences between the dependence of λmax and the dependence of KCT on μASt were due to complex formation free energy changes arising from formation of a charge-transfer complex on the local part of the polymer only, from variation of solvation before and after charge-transfer-complex formation, from variation of intra- and (or) intermol. interaction among electron-donating functional groups, and from variation in the Brownian motion of the donor polymer backbone chain.
CC 35-6 (Synthetic High Polymers)
IT 20755-56-0 28599-98-6 40760-06-3 40760-07-4 40760-08-5
40840-96-8 **40907-06-0**
RL: PRP (Properties)
(association constant of)
IT **40840-94-6P**
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, kinetics of)
IT **40907-06-0**
RL: PRP (Properties)
(association constant of)
RN 40907-06-0 HCAPLUS
CN 2,5-Furandione, compd. with 4-ethenyl-N,N-dimethylbenzenamine homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 108-31-6
CMF C4 H2 O3

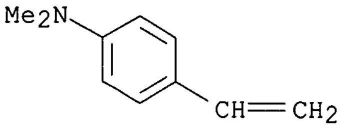


CM 2

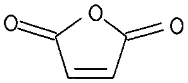
CRN 24936-45-6
CMF (C10 H13 N)x
CCI PMS

CM 3

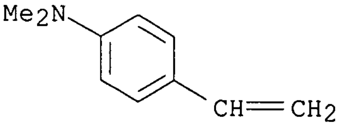
CRN 2039-80-7
CMF C10 H13 N



```
IT   40840-94-6P
     RL: FORM (Formation, nonpreparative); PREP (Preparation)
        (formation of, kinetics of)
RN   40840-94-6  HCAPLUS
CN   2,5-Furandione, compd. with ethenylbenzene polymer with
     4-ethenyl-N,N-dimethylbenzenamine (9CI)  (CA INDEX NAME)

     CM   1

     CRN  108-31-6
     CMF  C4 H2 O3
```



```
     CM   2

     CRN  24936-46-7
     CMF  (C10 H13 N . C8 H8)x
     CCI  PMS

          CM   3

          CRN  2039-80-7
          CMF  C10 H13 N
```

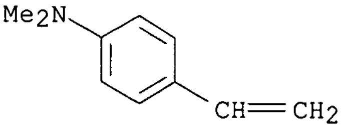


```
          CM   4

          CRN  100-42-5
          CMF  C8 H8
```

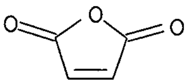
$H_2C{=}CH{-}Ph$

```
L48  ANSWER 5 OF 5  HCAPLUS  COPYRIGHT 2006 ACS on STN
AN   1968:78879  HCAPLUS
DN   68:78879
TI   Reactions of photographic gelatin with polymers.  II.  Polyampholytes with
```

```
     participation of 2-methyl-5-vinylpyridine, p-(dimethylamino)styrene, and
     allylamine
AU   Syromyatnikov, V. G.; Fedorova, I. P.; Pochinok, V. Ya.
SO   Sintez i Fiziko-Khimiya Polimerov (1966), No. 3, 87-95
     CODEN: SFKPAO; ISSN: 0583-4317
DT   Journal
LA   Russian
AB   Because they have both carboxylic and amide groups, polyampholytes
     obtained from monomers with cationic groups [2-methyl-5-vinylpyridine,
     p-(dimethylamino)styrene, and allylamine] and from monomers with anionic
     groups (methacrylic acid, maleic anhydride, and p-vinyl-benzoic acid) were
     studied to find out whether they reacted with gelatin to give more viscous
     solns.  Tests were run at pH 4, 7, 8, and 9 and at 40° with 1%
     solns. of the polyampholytes and 1% solns. of gelatin.  These solns. did
     not react.  Not only do amide and carboxylic groups have to be present,
     but other groups and their position in the copolymer also influence the
     gel formation with gelatin.  The polyampholytes, being stable over a wide
     pH range, can be used as polymeric extenders or as partial replacements
     for gelatin.
CC   36 (Plastics Manufacture and Processing)
IT   26938-73-8, uses and miscellaneous   30374-76-6, uses and miscellaneous
     30374-77-7 30374-78-8   30374-79-9   30374-80-2, uses and
     miscellaneous
     RL: USES (Uses)
        (viscosity of gelatin solns. containing)
IT   30374-78-8
     RL: USES (Uses)
        (viscosity of gelatin solns. containing)
RN   30374-78-8  HCAPLUS
CN   Maleic anhydride, polymer with N,N-dimethyl-p-vinylaniline (8CI)  (CA
     INDEX NAME)

     CM   1

     CRN  2039-80-7
     CMF  C10 H13 N
```



```
     CM   2

     CRN  108-31-6
     CMF  C4 H2 O3
```



```
=> d his
```

```
     (FILE 'HOME' ENTERED AT 13:03:15 ON 26 SEP 2006)
                SET COST OFF

     FILE 'HCAPLUS' ENTERED AT 13:03:28 ON 26 SEP 2006
                E BANNING J/AU
L1           85 S E3,E6-E9
                E TITTERINGTON/AU
L2           73 S E7,E12-E16
                E WEDLER/AU
L3            1 S E3
                E WEDLER W/AU
L4           53 S E3-E5
                E KING/AU
L5            1 S E3
                E KING C/AU
L6          144 S E3,E27,E28
                E KING CLIF/AU
L7           48 S E4,E5,E9-E11
                E XEROX/PA,CS
L8        21482 S E3,E4 OR XEROX?/PA,CS

     FILE 'REGISTRY' ENTERED AT 13:05:26 ON 26 SEP 2006
                ACT SHO682C/A
               ---------
L9        25351 SEA FILE=REGISTRY ABB=ON  PLU=ON  (108-31-6/CRN OR 1122-12-9/CR
               ---------
L10             STR
L11           4 S L10 SAM SUB=L9
L12          67 S L10 FUL SUB=L9
                SAV TEMP SHO682D/A L12
                SEL RN 1-3 23 25-27 33-35 37 44-46 50 63-65
L13          18 S E1-E18
                ACT SHO682B/A
               ---------
L14          27 SEA FILE=REGISTRY ABB=ON  PLU=ON  (12270-13-2/BI OR 13244-35-4/
               ---------
L15           2 S L14 AND L12
L16          16 S L13 NOT L15

     FILE 'HCAOLD' ENTERED AT 13:29:12 ON 26 SEP 2006
L17           0 S L16

     FILE 'HCAPLUS' ENTERED AT 13:29:15 ON 26 SEP 2006
L18          12 S L16
L19           0 S L18 AND L1-L8
L20          12 S L18 AND (PY<=2003 OR PRY<=2003 OR AY<=2003)
L21           1 S L20 AND INK
                E INK/CT,CW
L22       17410 S E3,E4
L23       35314 S E72,E73
                E E72+ALL
L24      218769 S E49+OLD,NT OR E48+OLD,NT
L25           6 S L20 AND L22-L24
L26           1 S L20 AND INK?/SC,SX
L27           7 S L21,L25,L26
L28           5 S L20 NOT L27
L29           1 S L20 AND (?INK OR ?INKS)
L30           7 S L27,L29
```

```
     FILE 'REGISTRY' ENTERED AT 13:37:34 ON 26 SEP 2006
L31          49 S L12 NOT L13
L32          25 S L14 NOT L15
L33           5 S L32 AND PMS/CI
L34           2 S 722444-57-7 OR 722444-56-6
L35          20 S L32 NOT L33
                SEL RN 6 10 17 18 20
L36          15 S L35 NOT E1-E5

     FILE 'HCAPLUS' ENTERED AT 13:47:17 ON 26 SEP 2006
L37             TRA L18 1- RN :       95 TERMS

     FILE 'REGISTRY' ENTERED AT 13:47:17 ON 26 SEP 2006
L38          95 SEA L37
L39          94 S L38 NOT L34,L36
L40          78 S L39 NOT L16
L41          76 S L40 NOT L12

     FILE 'HCAPLUS' ENTERED AT 13:50:32 ON 26 SEP 2006
L42           3 S L36 AND L18
L43           1 S L36 AND L15
L44           4 S L15,L43,L42
L45           8 S L30,L44
L46           5 S L18 NOT L45
L47           8 S L45 AND L1-L8,L18-L30,L42-L46
L48           5 S L46 AND L1-L8,L18-L30,L42-L47

     FILE 'REGISTRY' ENTERED AT 13:52:34 ON 26 SEP 2006
                E C18H22N4O5S/MF
                E C91H22N4O4/MF
                E C17H22N4O3S/MF

     FILE 'REGISTRY' ENTERED AT 14:00:06 ON 26 SEP 2006

     FILE 'HCAPLUS' ENTERED AT 14:00:30 ON 26 SEP 2006

=>
```

	L #	Hits	Search Text	DBs
1	L1	3755	(polymer or latex or copolymer or resin) near10 (attach$4 or bond$3 or treat$3 or react$3 or covalent$2) near10 ((ultraviolet or uv) adj stabilizer or antioxidant or hindered adj amine or hydroxybenzophenone or benzophenone or hydroxybenzotriazole or benzotriazole or hydroxytoluene or diaromatic adj secondary adj amine or diphenyl adj acrylonitrile adj ester or cinnamate or trisaryl adj triazine)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
2	L2	469	(polymer or latex or copolymer or resin) near10 (attach$4 or bond$3 or treat$3 or react$3 or covalent$2) near10 ((ultraviolet or uv) adj stabilizer or antioxidant) and (hindered adj amine or hydroxybenzophenone or benzophenone or hydroxybenzotriazole or benzotriazole or hydroxytoluene or diaromatic adj secondary adj amine or diphenyl adj acrylonitrile adj ester or cinnamate or trisaryl adj triazine)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB

	L #	Hits	Search Text	DBs
3	L4	58	2 and ink	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
4	L3	350	1 and ink	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
5	L5	1947	((523/160) or (523/161)).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
6	L6	9	5 and nguyen.in.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
7	L7	2	("6590012").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
8	L8	3	5 and xerox.asn. and hindered adj amine	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB

	L #	Hits	Search Text	DBs
9	L9	24	5 and xerox.asn. and stabilizer	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
10	L10	591	1 and (maleic or itaconic or chloromaleic or bromomaleic or dichloromaleic or dibromomaleic or iodomaleic or diiodomaleic) adj anhydride	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
11	L11	7	(1 2) and 5	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
12	L12	303	5 and (hindered adj amine or hydroxybenzophenone or benzophenone or hydroxybenzotriazole or benzotriazole or hydroxytoluene or diaromatic adj secondary adj amine or diphenyl adj acrylonitrile adj ester or cinnamate or trisaryl adj triazine)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
13	L13	69	12 and (maleic or itaconic or chloromaleic or bromomaleic or dichloromaleic or dibromomaleic or iodomaleic or diiodomaleic) adj anhydride	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB

	L #	Hits	Search Text	DBs
14	L14	987	(polymer or latex or copolymer or resin or anhydride) near5 (attach$4 or bond$3 or treat$3 or react$3 or covalent$2) near5 (hindered adj amine or hydroxybenzophenone or benzophenone or hydroxybenzotriazole or benzotriazole or hydroxytoluene or diaromatic adj secondary adj amine or diphenyl adj acrylonitrile adj ester or cinnamate or trisaryl adj triazine)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
15	L15	125	14 and ink	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
16	L16	26	(polymer or latex or copolymer or resin) near3 anhydride near5 (attach$4 or bond$3 or treat$3 or react$3 or covalent$2) near5 (hindered adj amine or hydroxybenzophenone or benzophenone or hydroxybenzotriazole or benzotriazole or hydroxytoluene or diaromatic adj secondary adj amine or diphenyl adj acrylonitrile adj ester or cinnamate or trisaryl adj triazine)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
17	L17	34	("4857595").URPN.	USPAT

	L #	Hits	Search Text	DBs
18	L18	21	17 and (hindered adj amine or hydroxybenzophenone or benzophenone or hydroxybenzotriazole or benzotriazole or hydroxytoluene or diaromatic adj secondary adj amine or diphenyl adj acrylonitrile adj ester or cinnamate or trisaryl adj triazine)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
19	L19	2048	(polymer or latex or copolymer or resin) near3 anhydride near5 (react$3 or esterif$8 or imidiz$5) near5 (alcohol or amin$2 or thiol or mercaptan)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
20	L20	313	19 and ink	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
21	L21	2	("7094812").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
22	L22	1	de-2625944-$.did.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB

	L #	Hits	Search Text	DBs
23	L23	2	("5279655").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
24	L24	0	(polymer or latex or copolymer or resin) near3 anhydride near5 (attach$4 or bond$3 or treat$3 or react$3 or covalent$2) near10 triphenylmethane	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
25	L25	0	(polymer or latex or copolymer or resin) near3 anhydride near5 (attach$4 or bond$3 or treat$3 or react$3 or covalent$2) near5 dye and triphenylmethane near10 (structure or formula)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
26	L26	8	(polymer or latex or copolymer or resin) near5 (attach$4 or bond$3 or treat$3 or react$3 or covalent$2) near5 dye and triphenylmethane near10 (structure or formula)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
27	L27	0	(polymer or latex or copolymer or resin) near5 (attach$4 or bond$3 or treat$3 or react$3 or covalent$2) near5 dye and triarylylmethane near10 (structure or formula)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB

	L #	Hits	Search Text	DBs
28	L28	5	(polymer or latex or copolymer or resin) near5 (attach$4 or bond$3 or treat$3 or react$3 or covalent$2) near5 dye and triarylmethane near10 (structure or formula)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
29	L29	23	(polymer or latex or copolymer or resin) near3 anhydride near5 (attach$4 or bond$3 or treat$3 or react$3 or covalent$2) near5 dye and dye near10 (structure or formula)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
30	L30	1	(polymer or latex or copolymer or resin) near3 anhydride near5 (attach$4 or bond$3 or treat$3 or react$3 or covalent$2) near5 (chromogen or chromophore) and (chromogen or chromophore) near10 (structure or formula)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB

	L #	Hits	Search Text	DBs
31	L31	31	(polymer or latex or copolymer or resin) near5 (attach$4 or bond$3 or treat$3 or react$3 or covalent$2) near5 (chromogen or chromophore) and (chromogen or chromophore) near10 (structure or formula) and (maleic or itaconic or chloromaleic or bromomaleic or dichloromaleic or dibromomaleic or iodomaleic or diiodomaleic) adj anhydride	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
32	L32	3	(polymer or latex or copolymer or resin) near3 anhydride near5 (attach$4 or bond$3 or treat$3 or react$3 or covalent$2) near5 dye and disperse adj dye	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
33	L33	1	32 and ink	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB

	L #	Hits	Search Text	DBs
34	L34	48	(polymer or latex or copolymer or resin) near5 (attach$4 or bond$3 or treat$3 or react$3 or covalent$2) near5 dye and disperse adj dye and (maleic or itaconic or chloromaleic or bromomaleic or dichloromaleic or dibromomaleic or iodomaleic or diiodomaleic) adj anhydride	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
35	L35	5	polymeric adj dye and triphenylmethane near10 (structure or formula)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
36	L36	0	35 and (maleic or itaconic or chloromaleic or bromomaleic or dichloromaleic or dibromomaleic or iodomaleic or diiodomaleic) adj anhydride	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
37	L37	142	polymeric adj dye and (maleic or itaconic or chloromaleic or bromomaleic or dichloromaleic or dibromomaleic or iodomaleic or diiodomaleic) adj anhydride and dye near10 (structure or formula)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB

	L #	Hits	Search Text	DBs
38	L39	2	("6497732").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
39	L40	1	39 and (ink or paper)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
40	L38	23	37 and ink	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
41	L41	396	(polymer or latex or copolymer or resin) near10 (attach$4 or bond$3 or treat$3 or react$3 or covalent$2) near10 (dye or chromogen or chromophore) and (chromogen or chromophore or dye) near10 (structure or formula) and (maleic or itaconic or chloromaleic or bromomaleic or dichloromaleic or dibromomaleic or iodomaleic or diiodomaleic) adj anhydride	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB

	L #	Hits	Search Text	DBs
42	L42	179	41 and ink	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
43	L43	4	(("6764541") or ("6790267")).PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
44	L44	2	("6790267").URPN.	USPAT
45	L45	3	("6764541").URPN.	USPAT
46	L46	8	(("3903034") or ("3687887")).PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
47	L47	4	46 and (maleic or itaconic or chloromaleic or bromomaleic or dichloromaleic or dibromomaleic or iodomaleic or diiodomaleic) adj anhydride	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
48	L48	973	(polymer or latex or copolymer or resin) near3 anhydride near5 (attach$4 or bond$3 or treat$3 or react$3 or covalent$2) near5 (ester or amide or imide or thioester)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB

	L #	Hits	Search Text	DBs
49	L49	130	48 and ink	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
50	L51	2575	styrene adj3 anhydride near5 (esterif$8 or amide or imide or thioester or ester or imidiz$5)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
51	L52	737	51 and ink	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
52	L53	299	51 same (alcohol or amine or thiol or mercpatan or alkanol) and ink	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
53	L54	24820	anhydride near10 react$3 near10 (alcohol or amine or thiol or mercaptan)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
54	L55	46	5 and 54	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB

	L #	Hits	Search Text	DBs
55	L56	13	("3432479" | "4070152" | "4618655" | "4857595" | "4963188" | "5244971" | "5393814" | "5596027" | "5889083" | "5954866" | "5977209").PN. OR ("6232405").URPN.	US-PGPUB; USPAT; USOCR
56	L57	400	(ink.ti. or ink.ab.) and 54	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
57	L58	1993	anhydride near3 (copolymer or polymer or latex or resin) near10 react$3 near10 (alcohol or amine or thiol or mercaptan)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
58	L59	318	58 and ink	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
59	L60	2	("5064921").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
60	L61	2	("5952429").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB

	L #	Hits	Search Text	DBs
61	L62	1	61 and (maleic or itaconic or chloromaleic or bromomaleic or dichloromaleic or dibromomaleic or iodomaleic or diiodomaleic) adj anhydride	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
62	L64	6	(("20060074142") or ("5512246") or ("5512250")).PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
63	L65	6	ep-1489144-$.did. or jp-02206624-$.did. or jp-63146948-$.did.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
64	L66	11	ep-513560-$.did. or gb-1047554-$.did. or ep-485882-$.did. or ep-449505-$.did. or ep-540248-$.did. or ep-396376-$.did.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
65	L67	18	(("5298583") or ("5043406") or ("5230733") or ("5055602") or ("3507850") or ("4704440") or ("4966607")).PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB

	L #	Hits	Search Text	DBs
66	L68	0	67 and (maleic or itaconic or chloromaleic or bromomaleic or dichloromaleic or dibromomaleic or iodomaleic or diiodomaleic) adj anhydride	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB

	L #	Hits	Search Text	DBs
1	L1	0	(polymer or latex or resin or copolymer or anhydride) near10 (react$3 or bond$3 or attach$3 or graft$3) near5 dye and (disperse adj (dye or red or yellow or blue or black)) and (maleic or itaconic or dimethylmaleic or chloromaleic or bromomaleic) adj anhdyride	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
2	L2	118	(polymer or latex or resin or copolymer or anhydride) near10 (react$3 or bond$3 or attach$3 or graft$3) near5 dye and (disperse adj (dye or red or yellow or blue or black)) and (maleic or itaconic or dimethylmaleic or chloromaleic or bromomaleic) adj anhydride	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
3	L3	114	polymer$2 adj dye and (disperse adj (dye or red or yellow or blue or black)) and (maleic or itaconic or dimethylmaleic or chloromaleic or bromomaleic) adj anhydride	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB

	L #	Hits	Search Text	DBs
4	L4	63	3 and ink	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
5	L5	162	colored near5 (polymer or resin or latex) and (disperse adj (dye or red or yellow or blue or black)) and (maleic or itaconic or dimethylmaleic or chloromaleic or bromomaleic) adj anhydride	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
6	L6	113	5 and ink	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB
7	L7	1	wo-2003029536-$.did.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB